US ARMY
FOREIGN SCIENCE AND TECHNOLOGY CENTER

U.S. ARMY MATERIEL COMMAND

-FOREIGN MATERIEL EXPLOITATION REPORT-

MACHINEGUN, GENERAL PURPOSE, 7.62 MM. MODEL PKM, SOVIET
MCN 35764

-PREPARED BY-

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—Foreign Materiel Exploitation Report—

Machine Gun, 7.62mm x 54R,
Model PKM (Soviet)
MCN 35764

FSTC-MX-17-12-75

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This is a Department of Defense Foreign Materiel Exploitation Report prepared by H.P. White Laboratory of Bel Air, Maryland, and reviewed by the US Army Foreign Science and Technology Center for the Defense Intelligence Agency.

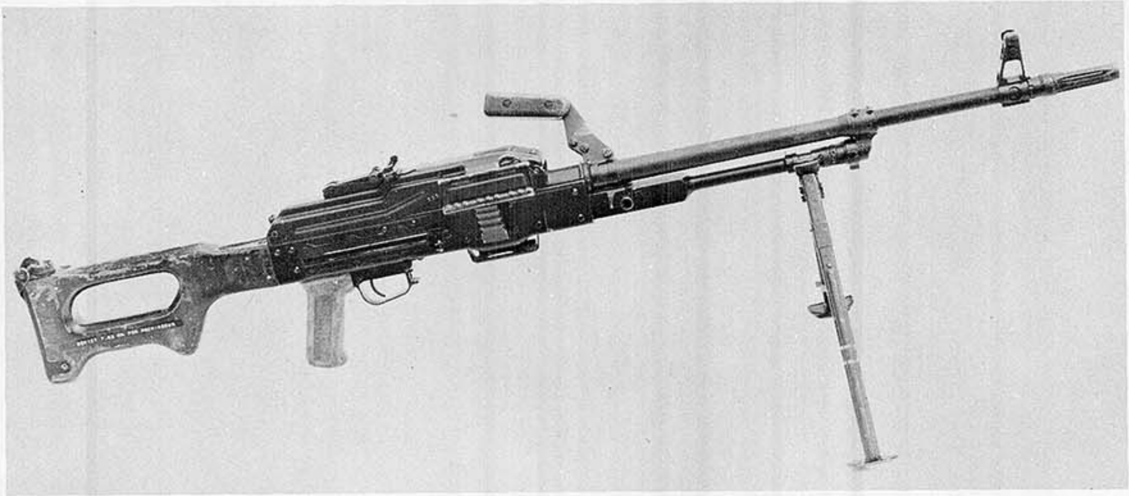

Figure 1. Machine Gun, 7.62 x 54R, Model PKM, Soviet, Complete

PREFACE

This report contains the results of tests conducted on one (1) sample of Machine Gun, 7.62 x 54R, Model PKM of Soviet origin. Testing was performed in accordance with US Army Test and Evaluation Command Commodity Engineering Test Procedure, Machine Guns and Automatic Weapons (MTP 3-2-045, dated 1 August 1971) except for variations noted within.

The reader is advised that some deviation from MTP 3-2-045 was necessitated by the limited test sample size (one weapon) and the "used" condition of that sample.

The results contained herein must be evaluated with a degree of caution, since the test sample--while serviceable--had been subjected to an undetermined amount of prior service (estimated at less than 1500 rounds).

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SECTION I. SUMMARY

---

1. PURPOSE

This report presents the results of the exploitation testing of a Soviet Model PKM 7.62 x 54R Machine Gun (MCN 35764, FOM 2-1005-4-7.62-20-3). Testing was performed in accordance with US Army Test and Evaluation Command Commodity Engineering Test Procedure, Machine Gun and Automatic Weapons (MTP 3-2-045) except as noted.

2. DESCRIPTION

The following materials were used in the performance of these tests:

a. Machine Gun, 7.62 x 54R, Model PKM, Soviet, Serial No. IP378 (serviceable) with folding bipod (FOM 2-1005-4-7.62-20-3).

b. Mount, tripod, Model (?), for use with Model PKM, 7.62 x 54R Machine Gun (Soviet), Serial No. 996, FOM 2-1005-5-7.62-18.

c. Belt, leading section, 25-round, for use with 7.62 x 54R cartridge (Soviet), FOM 2-1005-6-7.62-31.

d. Belt, following section, 25-round, for use with 7.62 x 54R cartridge (Soviet), FOM 2-1005-6-7.62-31-1.

e. Cartridge, 7.62 x 54mm, Ball, Type L, M1908, copper clad steel case, guilding metal clad bullet (Soviet), FOM 2-1305-1-7.62-3.

f. Cartridge, 7.62 x 54mm, Ball, Type LPS, mild steel core bullet (Soviet) FOM 2-1305-1-7.62-29.

g. Cartridge, 7.62 x 54mm, Tracer, M1930, Type 46 (Soviet), FOM 2-1305-1-7.62-14.

h. Cartridge, 7.62 x 54mm, API, Type B-32, M1932 (Soviet), FOM 2-1305-1-7.62-1.

i. Cartridge, 7.62 x 54mm, API, Type 53 (China), FOM 5-1305-1-7.62-6-1.

j. Cartridge, 7.62 x 54mm, Ball, Type 53 (China), FOM 5-1305-1-7.62-5-1.

3. CONCLUSIONS

   a. The PKM Machine Gun satisfies the requirements of a Machine Gun. It is (1) functionally reliable, (2) easily maintained and (3) dependable under adverse environmental conditions.

   b. The accuracy of the PKM Machine Gun is consistent with that of most contemporary automatic weapons of its class.

SECTION II. SCOPE OF TEST

SCOPE OF TESTS PERFORMED

One (1) PKM Machine Gun (Serial No. IP378) was subjected to a testing program in accordance with Table I and the procedures specified in MTP 3-2-045.

TABLE I. SCOPE OF TESTS PERFORMED

Less Than Severe	Extreme Conditions
Safety Determination (6.2.1.4)	Cook-Off (6.2.7)
Characteristics (6.2.2)	Reliability/Endurance (6.2.8)
Data Sheet (6.2.2.2)	High Temperature Test (6.2.9.1)
Double Feed Safety (6.2.2.3)	Low Temperature Test (6.2.9.2)
Assembly/Disassembly (6.2.3)	Icing (6.2.9.3)
Accuracy/Dispersion (6.2.5/App. A&B)	Unlubricated (6.2.10)
Attitude (6.2.6)	Water Spray (6.2.11)
Flash (6.2.17)	Dynamic Dust (6.2.12)
Smoke (6.2.18)	Static Dust (6.2.13)
Noise (6.2.19)	Mud Test No. 1 (6.2.15)
Belt Pull (6.2.20)	Mud Test No. 2 (6.2.16)
Barrel Performance (6.2.21)	
Maintenance Evaluation (6.2.23)	
Human Factors Evaluation (6.2.24)	
Dye Penetrant Test (6.2.1.4)	

SECTION III. PROCEDURE

1. PROCEDURE (GENERAL)

All tests were conducted with a single sample of the PKM Machine Gun but were otherwise in accordance with the procedures of US Army Test and Evaluation Command Commodity Engineering Test Procedure, Machine Guns and Automatic Weapons, MTP 3-2-045, dated 1 August 1971, except as noted herein.

The limited size of the test sample necessitated selection of a testing sequence which would minimize the cumulative effect of prior tests on each successive test and maximize the data developed by the program should a catastrophic failure or excessive component wear preclude continued testing. (See Table II)

Ammunition used in this test program was of several types (API, Ball and Tracer) and a variety of manufacturer's lots - both Soviet and Chinese military issue. In general, the condition of the ammunition with regard to packaging and preservation was poor, exhibiting moderate amounts of corrosion, dirt and "gum." No corrective action (cleaning or refurbishment) whatever was taken as initial testing revealed that this had no affect on the operation of the PKM Machine Gun and its use would more closely represent conditions which apparently prevail in the field.

TABLE II. TESTING SEQUENCE

Sequence	Test	Sequence	Test
1	Dye Penetrant Inspection (6.2.1.4)	13	Reliability and Endurance (6.2.8)
2	Characteristics (6.2.2)	14	Unlubricated (6.2.10)
3	Data Sheet (6.2.2.2)	15	Dynamic Dust (6.2.12)
4	Safety Check (6.2.2.3)	16	Static Dust (6.2.13)
5	Assembly/Disassembly (6.2.3)	17	Mud No. 1 (6.2.15)
		18	Mud No. 2 (6.2.16)
6	Accuracy/Dispersion (6.2.5, App. A and B)	19	High Temperature (6.2.9.1)
		20	Water Spray (6.2.11)
7	Flash (6.2.17)	21	Icing (6.2.9.3)
8	Smoke (6.2.18)	22	Low Temperature (6.2.9.2)
9	Noise (6.2.19)	23	Barrel Performance (6.2.21)
10	Belt Pull (6.2.20)	24	Maintainability (6.2.23)
11	Attitude (6.2.6)	25	Human Factors (6.2.24)
12	Cook-Off (6.2.7)	26	Dye Penetrant Inspection (6.2.1.4)

2. NON-FIRING TESTS

Of the twenty-six (26) tests conducted, nine (9) involved no firings whatever.

a. Safety Certification (6.2.1.4)

The intent of this test is to insure that an experimental weapon is properly safety certified prior to initiation of testing. The PKM Machine Gun is not an experimental weapon and this section is, therefore, not appliable except that prior to initiation of any of the firing tests, critical components were dye penetrant inspected to insure that the test sample was free of incipient damage or material flaws. This inspection was limited to those components which were not permanently assembled (riveted, sweat fitted, etc.) and included:

—the Piston
—the Slide
—the Cartridge Gripper
—the Bolt
—the Firing Pin
—the Barrel

b. Inspection for Characteristics and Defects (6.2.2)

This inspection was conducted in accordance with MTP 3-2-045.

c. Assembly/Disassembly (6.2.3)

The time and tools required to disassemble and reassemble the PKM to and from the field-stripped level of disassembly were determined in accordance with MTP 3-2-045 (see Figure 2). The complete disassembly portion of this test was not conducted until after all firing tests were completed to preclude irreparable damage to the single test sample available. In addition total disassembly was performed for photographic documentation only.

d. Data Sheet (6.2.2.2)

A characteristic data sheet was prepared in accordance with MTP 3-2-045 and a format provided by the US Army Foreign Science and Technology Center.

e. Double Feed Safety Test (6.2.2.3)

A Double Feed Safety Test was conducted in accordance with MTP 3-2-045 with three (3) types of ammunition - Ball, Tracer and API. Ten (10) cartridges of each type were handloaded into the chambered position and ten (10) rounds were then cycled through the feeding mechanism to simulate the double feed malfunction.

f. Barrel Performance (6.2.21)

Since only one (1) barrel was available for this test program, the procedure of MTP 3-2-045, Paragraph 6.2.21 was not applicable. As an alternate means of indicating barrel performance, velocity, dispersion, yaw, cyclic rate and bore diameter inspection and tests were conducted periodically throughout the firing test sequences of this program.

g. Maintainability (6.2.23)

The procedure of MTP 3-2-045, Paragraph 6.2.23 is somewhat general, indicating the specific procedure is dependent upon the nature of malfunction and stoppages encountered in other testing included in MTP 3-2-045 and the type and frequency of maintenance required to prevent such malfunction and stoppages. Paragraph 6.2.23 further requires that once the malfunction and stoppages are identified additional tests be performed to determine Mean Time Between Failure (MTBF), Mean Active Maintenance Downtime (MN), Mean Time to Repair (MTTR), Mean Rounds Between Maintenance (MRBM), etc. Such testing is outside the scope of this program, since such data is only relevant "when the item is not being stressed beyond its design limits" (Paragraph 6.2.23,a). Further testing of the single sample available would have most certainly exceeded any reasonable life expectancy for the PKM Machine Gun. Accordingly, the data from all tests conducted in this program was reviewed and consolidated. Based on this data a general appraisal of maintainability was then made.

h. Human Factors Evaluation (6.2.24)

This evaluation was conducted in accordance with MTP 3-2-045.

i. Dye Penetrant Inspection (6.2.1.4)

Upon completion of all firing tests, the dye penetrant test of the Piston, Slide, Cartridge Gripper, Bolt, Firing Pin and Barrel was again conducted to determine the presence (if any) of incipient damage induced by this test program.

3. FIRING TESTS

Seventeen (17) tests were conducted during this program which included firing sequences. Of this number, eleven (11) of these tests were adjudged as "extreme conditions" tests and six (6) were adjudged as representative of conditions encountered in "Less Than Severe" usage (see Table I).

a. Accuracy/Dispersion Tests (6.2.5, Appendices A and B)

Accuracy and Dispersion Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.5, Appendices A and B (as applicable) except that the procedure of Appendix A was used with the PKM Machine Gun in the Tripod configuration only and a limited test of the Anti-Aircraft Mount configuration was fired at 100-yard range with the mount sandbagged in place. Semi-Automatic fire portions of these tests were simulated by removal of alternate cartridges from otherwise normally belted ammunition.

b. Flash Test (6.2.17)

Flash Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.17, using an f4.5 lens and ASA400 rated film except that the limited sample size precluded comparative tests of "new" and "old" barrels.

c. Smoke Test (6.2.18)

Smoke tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.18, using an f4.5 lens and ASA400 rated film.

d. Noise Test (6.2.19)

Noise Tests were conducted in accordance with MTP 3-2-045 and MTP 3-2-811.

e. Belt Pull Test (6.2.20)

Belt Pull Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.20 for each of three (3) belts.

f. Attitude Test (6.2.6)

Attitude Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.6 with the PKM Machine Gun in the Bipod configuration. The weapon was fixtured by mounting the bipod rigidly in each of the four (4) cardinal orientations but with freedom of recoil. Firings were otherwise conducted from the shoulder in that the gun and bipod were free to recoil within the limits of the ability of the shooter to control such recoil.

g. Cook-Off Test (6.2.7)

Cook-Off Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.7. Thermocouple sensors were affixed to four (4) positions on the PKM Machine Gun (Flash Suppressor, 6 inches from muzzle, 10 inches from muzzle, 17 inches from muzzle) and their output recorded on a chart recorder at one (1) second intervals. Time to fire the conditioning rounds and time to cook-off were recorded. Firings were conducted in continuous full-automatic fire. Cook-Off Test rounds were prepared by removal of the primer anvil and recessing the primer approximately .100 of an inch.

h. Reliability and Endurance (6.2.8)

Reliability and Endurance Tests were conducted in accordance with MTP 3-2-045 except that all firings conducted prior to this test were credited against the 25,000-round requirement.

i. Unlubricated Test (6.2.10)

Unlubricated Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.10.

j. Dynamic Dust Test (6.2.12)

Dynamic Dust Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.12 except that the sample size for this test was one (1) instead of three (3).

k. Static Dust Test (6.2.13)

Static Dust Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.13.

l. Mud Test No. 1 (6.2.15)

Mud Test No. 1 was conducted in accordance with MTP 3-2-045, Paragraph 6.2.15.

m. Mud Test No. 2 (6.2.16)

Mud Test No. 2 was conducted in accordance with MTP 3-2-045, Paragraph 6.2.16.

n. High Temperature Test (6.2.9.1)

High Temperature Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.9.1 except that periodic barrel changes to preclude cook-offs were impossible, since spare barrels did not exist.

o. Water Spray Test (6.2.11)

Water Spray Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.11.

p. Icing Test (6.2.9.3)

Icing Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.9.3.

q. Low Temperature Test (6.2.9.2)

Low Temperature Tests were conducted in accordance with MTP 3-2-045, Paragraph 6.2.9.2.

SECTION IV. RESULTS

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1. GENERAL

The following observations are summaries from the data contained in Appendix A of this report. In evaluation of these results, it must be remembered that the test sample was limited to a single PKM Machine Gun.

2. INSPECTION FOR CHARACTERISTICS AND DEFECTS (6.2.2 and 6.2.3)

a. PKM Machine Gun, Serial No. IP378, was disassembled and found to contain no components which, because of their condition, would cause faulty operation (Figure 2, Table III).

b. The PKM Machine Gun appeared to be well designed and the materials and workmanship consistent with that of US military weaponry. The cosmetic quality of the stock and most external surfaces indicated the test weapon had probably been exposed to light field service.

c. The PKM Machine Gun weighs 18.5 pounds and is 47 inches long. The stock is fabricated from laminated wood relieved to provide a grip to steady the weapon with the hand, which is freed by the use of the bipod support. The butt of the stock is hollowed out and fitted with a spring cover to provide for storage of the cleaning equipment. Cleaning rods are stored with the stamped metal legs of the bipod. The Receiver is fitted with a "pistol grip" Trigger group (the grip of which is plastic), which includes a rotary, two-position selector (safe and fire). All metal parts appear to be steel of a quality, hardness and finish consistent with that used in comparable components of US military weaponry. Wherever practical metal components of the weapon, bipod and tripod have been fabricated from stamped metal parts.

d. The PKM Machine Gun is chambered for the 7.62 x 54Rmm cartridge and is designed to fire in the automatic mode of fire only. The weapon fires linked ammunition and is configured for right to left hand feeding only. It is designed to be fired from the shoulder from either a bipod (permanently attached, folding type) or a tripod. The later may be adjusted for either ground mount, prone position firing or for anti-aircraft firing by extension of the vertical supports of the tripod.

TABLE III. COMPONENT NOMENCLATURE (See Figure 2)

Part Number	Nomenclature
1	Piston and Slide
2	Bolt
3	Firing Pin
4	Drive Spring and Guide
5	Barrel
6	Cover
7	Feed Tray
8	Cleaning Kit
9	Cleaning Rod
10	Flash Suppressor
11	Oiler
12	Receiver and Stock
13	Bipod
14	Butt Rest

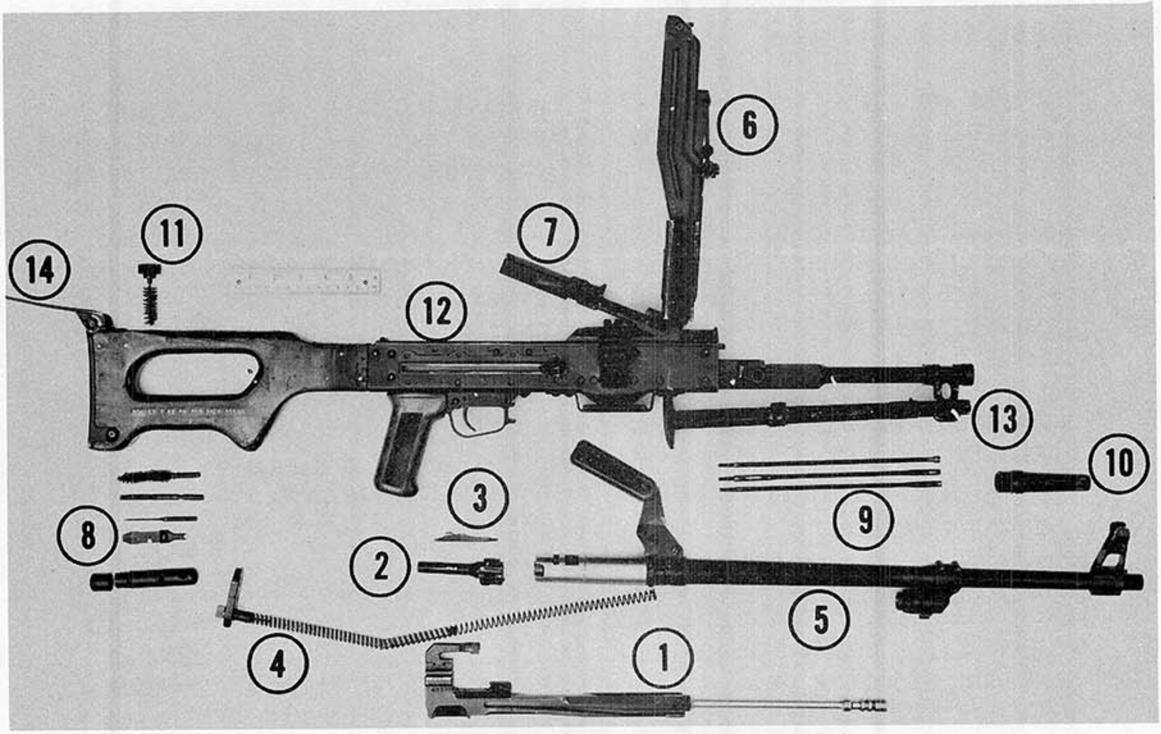

Figure 2. PKM Machine Gun Field Stripped

e. The PKM Machine Gun fires from the open bolt at a rate of between 690 and 720 rpm, and is gas operated. The gas regulator cylinder has three (3) settings; however, these are not intended to vary the rate of fire but rather are a means of compensating for variations in ammunition and the effect of heat, cold and accumulation of dirt.

f. The PKM Machine Gun ejection port is equipped with a dust cover which is closed at all times except when cammed open by the rearward movement of the Bolt to facilitate ejection of the extracted case. The Receiver of the weapon includes a bracket to which an ammunition box (not provided with test sample) may be attached.

g. The Barrel of the PKM Machine Gun is 23 3/4 inches long excluding the bar type flash suppressor, contains four (4) grooves of right hand twist which is 1 in 10 3/4 inches. The Barrel is attached to the receiver by a sliding Lock which is used to adjust headspace. The Carrying Handle fitted to the barrel is designed to be rotated to pry loose a resistant barrel once the Lock has been removed thereby facilitating the quick change of barrels.

h. The PKM Machine Gun is equipped with a protected, open "post" type of front sight adjustable in elevation only. The rear sight is a square notch leaf sight adjustable in both windage and elevation. The rear sight is graduated in 100-meter increments from 1 to 15 and includes a battle sight setting of approximately 330 meters. The horizontal separation of the front and rear sights (sight radius) is 26 1/16 inches.

i. The muzzle velocity of the PKM Machine Gun is in large part dependent on the type of ammunition fired. Of six (6) varieties of ammunition types and country-of-origins tested the muzzle velocity varied from 2683 to 2773 feet per second (see Table IV).

TABLE IV. SUMMARY OF RESULTS OF MUZZLE VELOCITY TESTS

Ammunition	FOM Number	Average Velocity of 20 Rounds (fps)
Ball, Type 53, Chinese	5-1305-1-7.62-5-1	2683
Ball, Type L, Soviet	2-1305-1-7.62-3	2749
Ball, Type LPS, Soviet	2-1305-1-7.62-29	2741
Tracer, Type 46, Soviet	2-1305-1-7.62-14	2725*
API, Type B-32, Soviet	2-1305-1-7.62-1	2773*
API, Type 53, Chinese	5-1305-1-7.62-6-1	2706*

*Average of 10 rounds only.

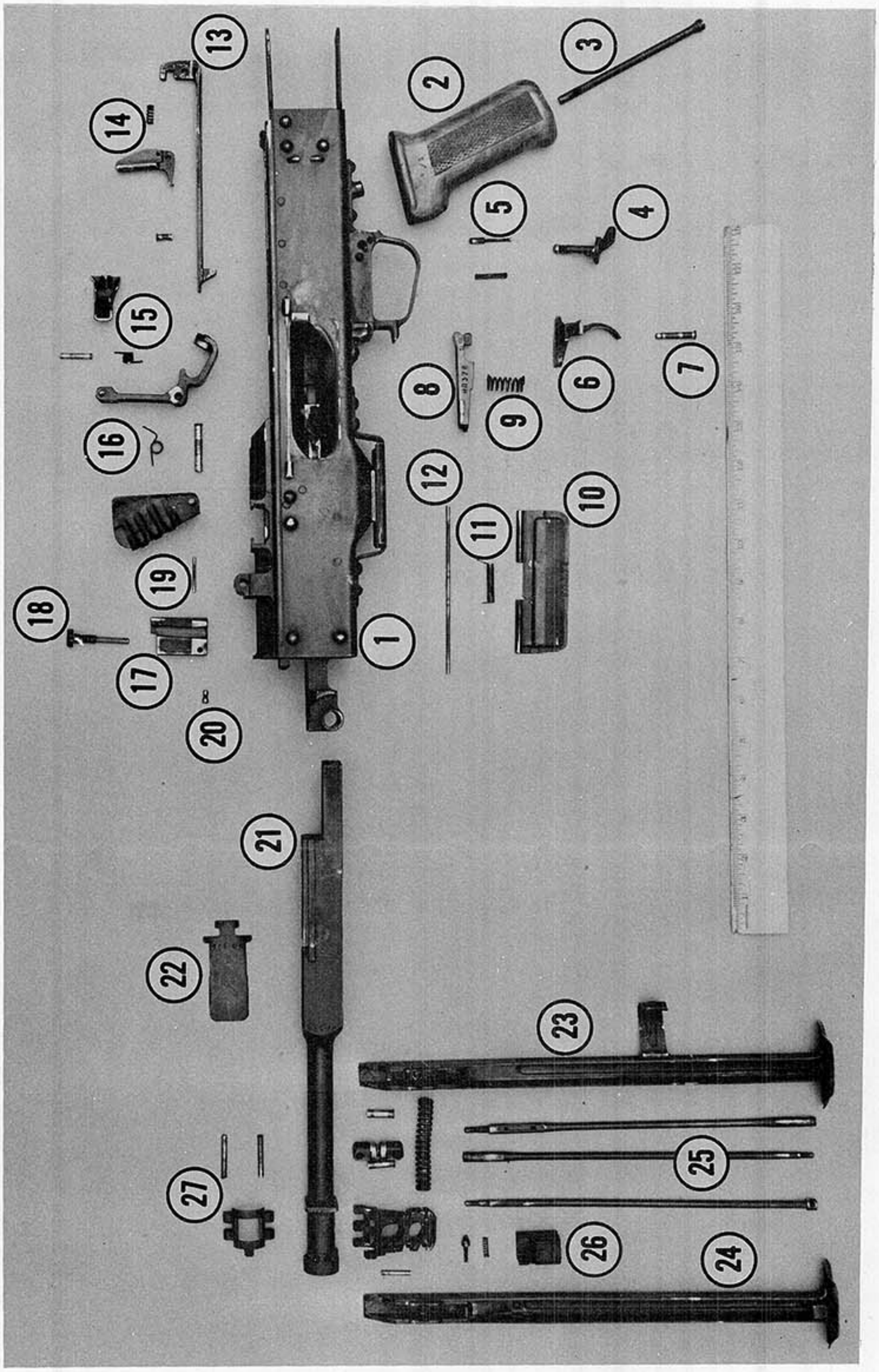

Figure 3. Receiver Assembly Disassembled

TABLE V. RECEIVER NOMENCLATURE

Part	Nomenclature	Part	Nomenclature
1	Receiver	15	Feed Pawl Assembly (3 pcs)
2	Pistol Grip	16	Belt Pull Lever and Cover(4)
3	Pistol Grip Screw	17	Barrel Lock
4	Safety	18	Barrel Lock Adjustment Screw
5	Safety Detent Assembly (2 pcs)	19	Barrel Lock Adjustment Screw Retaining Pin
6	Trigger	20	Barrel Lock Retaining Pin
7	Trigger Pin	21	Gas Piston Tube
8	Sear	22	Gas Piston Tube Retainer
9	Sear Spring	23	Bipod Leg - Left
10	Ejection Port Cover	24	Bipod Leg - Right
11	Ejection Port Cover Spring	25	Cleaning Rod (3 pcs)
12	Ejection Port Cover Pin	26	Cleaning Rod Retainer Assembly (3 pcs)
13	Operating Rod	27	Bipod Mounting Assembly (9 pcs)
14	Operating Rod Handle Assembly (3 pcs)		

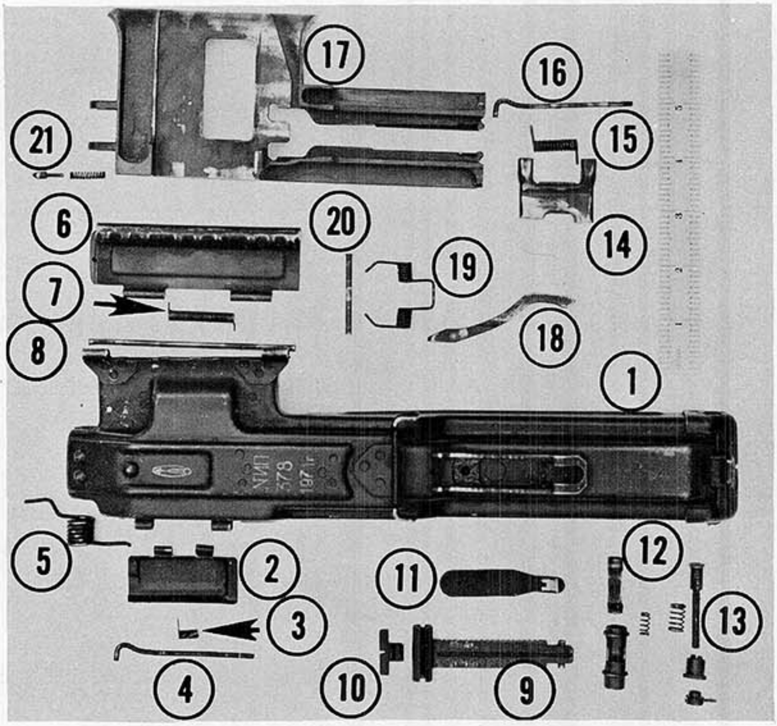

Figure 4. Feed Cover Totally Disassembled

TABLE VI. FEED COVER NOMENCLATURE

Part	Nomenclature	Part	Nomenclature
1	Cover	12	Elevation Adjustment Assembly (3 pcs)
2	Belt Exit Cover		
3	Belt Exit Cover Spring (Broken)	13	Windage Adjustment Assembly (4 pcs)
4	Belt Exit Cover Pin	14	Holding Pawl
5	Cover Spring	15	Holding Pawl Spring
6	Belt Entrance Cover	16	Holding Pawl Pin
7	Belt Entrance Cover Spring	17	Feed Tray
8	Belt Entrance Cover Pin	18	Depressor
9	Rear Sight	19	Depressor Spring
10	Sight Blade	20	Depressor Pin
11	Sight Spring	21	Feed Tray Detent Assembly (2 pcs)

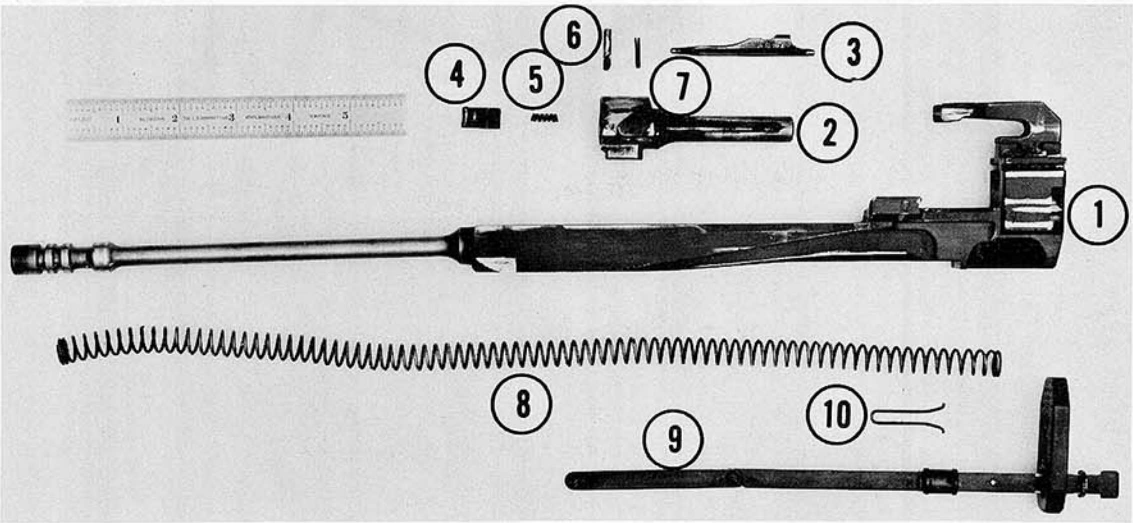

Figure 5. Bolt Assembly Disassembled

TABLE VII. BOLT ASSEMBLY NOMENCLATURE

Part	Nomenclature	Part	Nomenclature
1	Slide and Piston	6	Extractor Pin
2	Bolt	7	Extractor Pin Retainer
3	Firing Pin	8	Drive Spring
4	Extractor	9	Drive Spring Guide
5	Extractor Spring	10	Drive Spring Retainer

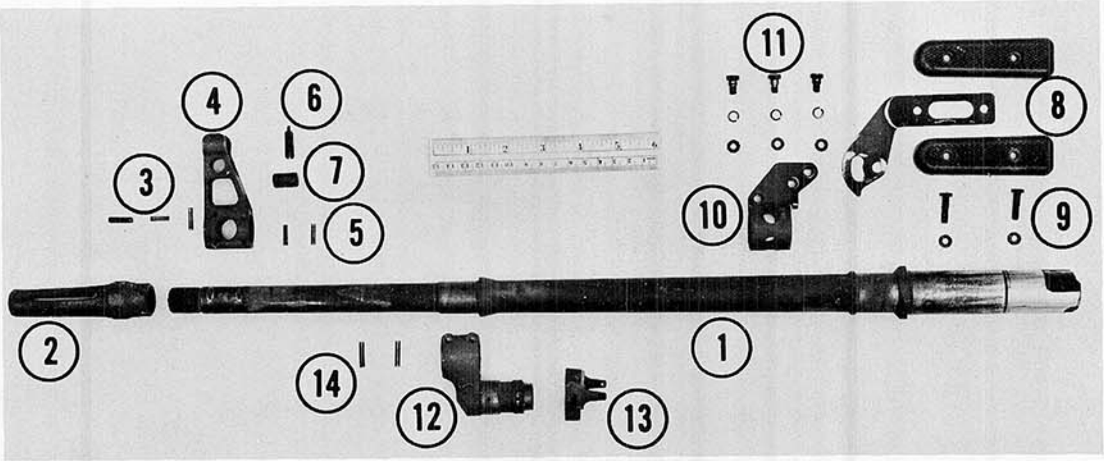

Figure 6. Barrel Assembly Disassembled

TABLE VIII. BARREL ASSEMBLY NOMENCLATURE

Part	Nomenclature	Part	Nomenclature
1	Barrel	8	Carrying Handle (3 pcs)
2	Flash Suppressor	9	Carrying Handle Grip Hardware (Screws, Nuts--2 ea)
3	Flash Suppressor Detent, Detent Spring and Detent Retainer	10	Carrying Handle Collar
4	Front Sight Base	11	Carrying Handle Collar Mounting Hardware (Screws, Nuts, Washers--3 ea)
5	Sight Base Mounting Pins (2)	12	Gas Cylinder
6	Front Sight Post	13	Gas Regulator
7	Front Sight Post Mount	14	Gas Cylinder Mounting Pin (2)

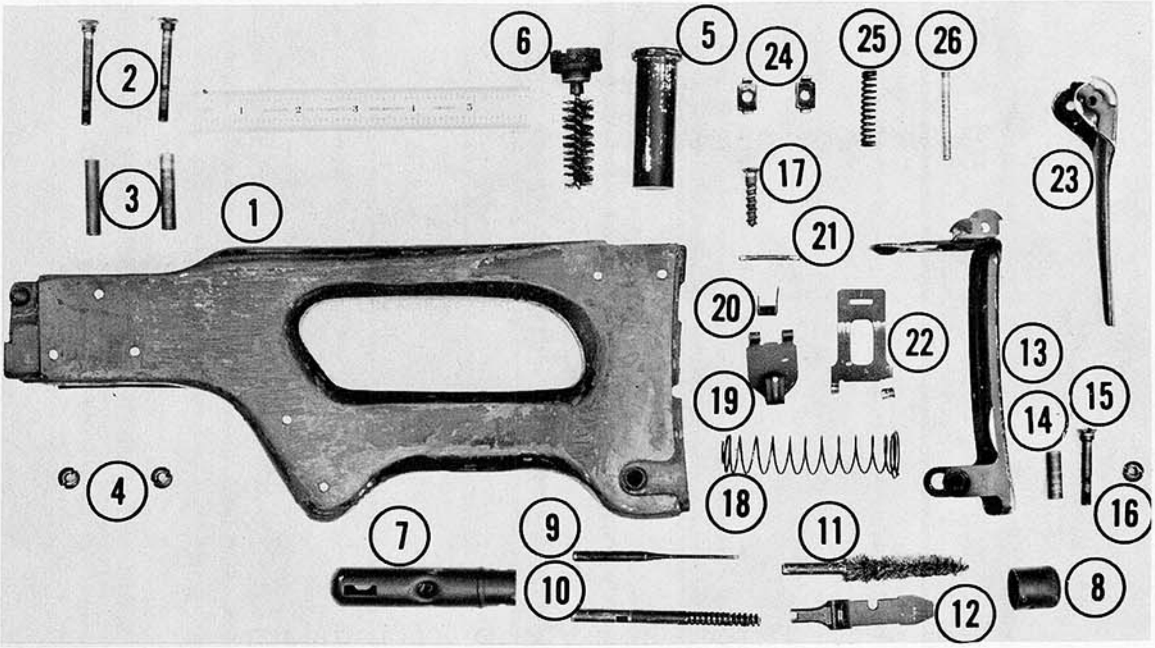

Figure 7. Stock Disassembled

TABLE IX. STOCK NOMENCLATURE

Part	Nomenclature	Part	Nomenclature
1	Buttstock	14	Butt Plate Bushing
2	Buttstock Screws (2)	15	Butt Plate Screw
3	Buttstock Screw Bushing (2)	16	Butt Plate Nut
4	Buttstock Screw Nuts (2)	17	Butt Plate Screw, Top
5	Oil Reservoir	18	Butt Trap Spring
6	Oiler Brush	19	Butt Trap Cover
7	Container, Cleaning Kit	20	Butt Trap Cover Spring
8	Cap, Cleaning Kit	21	Butt Trap Cover Pin
9	Punch	22	Butt Trap Cover Mount (Broken)
10	Cleaning Rod Tip	23	Butt Rest
11	Bore Brush	24	Butt Rest Detents (2)
12	Screwdriver Blade and Front Sight Tool	25	Butt Rest Detent Spring
13	Butt Plate	26	Butt Rest Pin

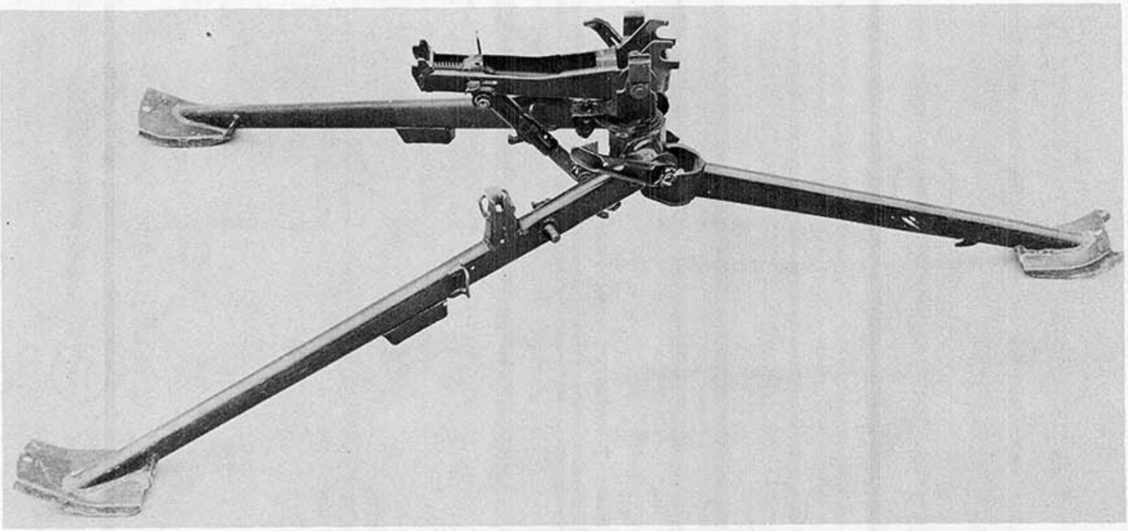

Figure 8. Tripod, Ground/Prone Configuration

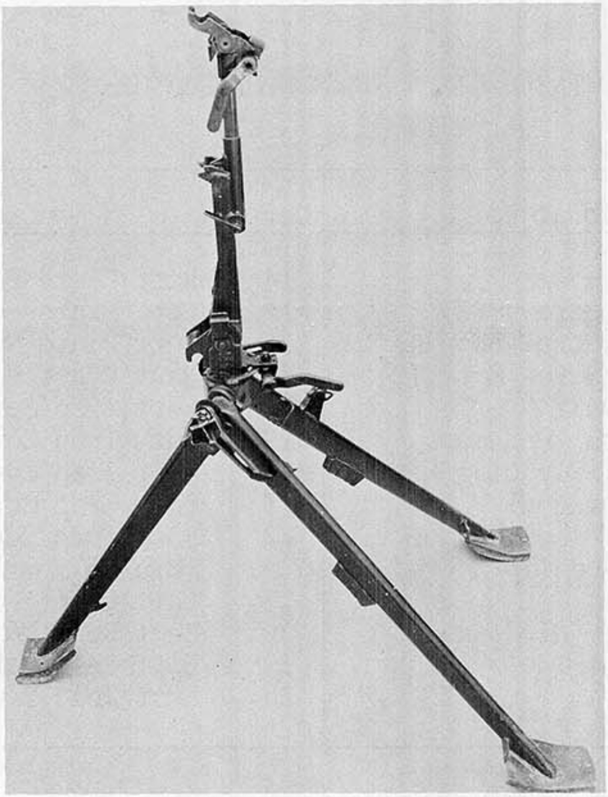

Figure 9. Tripod, Anti-Aircraft Configuration

3. SAFETY CERTIFICATION TEST (PARA 6.2.1.4)

The critical components of the test PKM Machine Gun were dye penetrant tested (Zyglo) prior to--and upon completion of--all firing tests. None of these components (Piston, Slide, Cartridge Gripper, Bolt, Firing Pin, Barrel) displayed any structural defects.

4. DOUBLE FEED SAFETY TEST (PARA 6.2.2.3)

Ten (10) rounds of each of five (5) types of ammunition were tested in accordance with Paragraph 6.2.2.3 of MTP 3-2-045. No instances of bullet contact with the primer were observed. Examination of the test ammunition indicates that the tip of the round being fed will strike the base of the chambered cartridge well above the primer (See Figure 10).

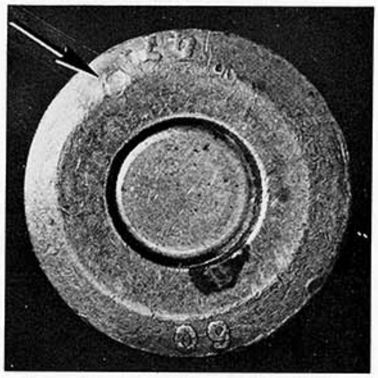

Figure 10. Results of Double Feed Test (Typical)

5. ACCURACY AND DISPERSION (PARA 6.2.5, Appendices A and B)

The PKM Machine Gun was tested in accordance with Paragraph 6.2.5, Appendices A and B of MTP 3-2-045. The intent of these procedures is to:

a. Establish the inherent accuracy of the system (gun and ammunition) devoid of human factors.

b. Verify the calibration of the weapon's sights.

c. Establish the accuracy of the gun system under conditions representative of those encountered in the field.

System Accuracy

A variety of tests were conducted to determine the accuracy of the PKM Machine Gun when fired from a fixture, using a variety of ammunition. Full automatic accuracy groups were fired for each of six (6) ammunitions at a range of 1000 inches, the results of which are presented in Table X.

TABLE X. SUMMARY OF AMMUNITION ACCURACY TEST

Ammunition	FOM No.	Groups/ Rounds	Average Extreme Spread (in.) x	y	Average Mean Radius
Ball, Type 53, Chinese	5-1305-1-7.62-5-1	5/100	2.2	2.3	0.68
Ball, Type L, Soviet	2-1305-1-7.62-3	3/60	1.9	2.4	0.7
Ball, Type LPS, Soviet	2-1305-1-7.62-29	1/20	1.7	1.7	0.6
API, Type 53, Chinese	5-1305-1-7.62-6-1	1/20	1.5	1.7	0.5
API, Type B32, Soviet	2-1305-1-7.62-1	1/20	2.4	2.7	0.8
Tracer, Type 46, Soviet	2-1305-1-7.62-14	1/20	2.2	1.4	0.5

Field Accuracy

Tests were conducted to determine the accuracy of the PKM Machine Gun when fired with a bipod, tripod and benchrest support (sandbag);

when fired from hard ground, sod and sand; when fired with the bipod/tripod sandbagged; and when fired at zero, extreme right and extreme left deflections. In order to provide a basis for evaluating the results of these tests with those of the system accuracy tests, many firings were conducted at a range of 1000 inches in full automatic fire, using Type 53, Chinese, Ball ammunition at zero gun elevation. Tables XI and XII present a summary of the results of these tests.

TABLE XI. SUMMARY OF RESULTS OF ACCURACY TESTS AT 1000-INCH RANGE

	Average Mean Radius (in.)*		
	Zero Deflection	Max Right Deflection	Max Left Deflection
Machine Rest (Reference Only)	0.68	N/A	N/A
Tripod, Low Setting			
Hard Ground	2.97	2.45	5.04
Hard Ground, Sandbagged	1.42	1.08	1.08
Sod	1.46	3.16	3.88
Sod, Sandbagged	0.90	1.64	1.94
Sand	1.70	1.88	3.32
Sand, Sandbagged	1.00	1.10	2.06
Tripod, High Setting			
Hard Ground	5.20	N/A	N/A
Hard Ground, Sandbagged	2.54	N/A	N/A

*Average of mean radii of five (5) 20-round groups.

TABLE XII. SUMMARY OF RESULTS OF DISPERSION AT 1000-INCH RANGE

	Average Extreme Spread (in.)*					
	Zero Deflection		Max Right Deflection		Max Left Deflection	
	x	y	x	y	x	y
Machine Rest (Reference Only)	2.2	2.3	N/A	N/A	N/A	N/A
Tripod, Low Setting						
Hard Ground	11.1	5.6	7.6	6.2	17.9	8.1
Hard Ground, Sandbagged	4.6	3.7	2.9	3.2	2.9	3.5
Sod	3.6	4.3	10.4	9.0	12.1	12.6
Sod, Sandbagged	3.2	3.0	6.0	3.5	5.6	4.8
Sand	5.0	4.3	6.2	6.0	8.1	9.4
Sand, Sandbagged	2.1	4.6	3.8	2.7	8.4	4.8
Tripod, High Setting						
Hard Ground	15.8	14.1	N/A	N/A	N/A	N/A
Hard Ground, Sandbagged	8.0	5.8	N/A	N/A	N/A	N/A

*Average extreme spread of five (5) 20-round groups.

Firing tests were conducted at 100 meters range under a variety of conditions representative of field conditions, Table XIII presents the results of these tests conducted, using Type 53, Chinese, Ball ammunition.

TABLE XIII. SUMMARY OF RESULTS OF ACCURACY AND DISPERSION TESTS AT 100-METER RANGE

	Groups/ Rounds	Average Mean Radius (in.)	Average Extreme Spread (in.)	
Benchrest, Semi-Automatic	5/50	2.68	6.4	9.2
Bipod, Prone, Semi-Automatic	5/50	2.74	6.3	7.9
Benchrest, Automatic	15/300	8.43*	17.6*	24.8*
Bipod, Prone, Automatic	15/300	8.30*	21.1*	25.1*
Bipod, Fouled Bore, Automatic, Prone	9/90	8.36*	19.5*	19.5*
Bipod, Cold&Oiled, Automatic, Prone	9/90	6.55*	21.6*	17.4*
Benchrest, Automatic	9/90	7.98*	23.2*	11.7*
Bipod, Hot Barrel, Automatic, Prone	9/90	8.25*	24.8*	8.5*
Benchrest, Hot Barrel, Automatic	9/90	Unk**	Unk**	Unk**

*Average does not include groups for which one or more rounds missed target.

**One or more rounds of all groups missed target.

Three (3) shooters each fired as many short bursts as possible in a one (1) minute interval at an "E" type target (kneeling silhouette) erected at 100-meter range from the prone position with bipod. Table XIV presents the results of this test.

TABLE XIV. SUMMARY OF RESULTS OF AIMED BURST FIRE

	Rounds Fired*	Hits*
Shooter A	512	238 (46%)
Shooter B	456	221 (48%)
Shooter C	371	236 (63%)
TOTAL	1339	695 (52%)

*Cumulative totals of three (3) tests each.

Sight Calibration

The PKM Machine Gun was zeroed to a 12-inch bullseye at 100 meters firing from sod on a sandbagged tripod mount. Three (3), ten (10) round groups were then fired in the semiautomatic mode at 100, 300 and 400 meters, adjusting only the rear sight to the appropriate range marking before each firing sequence. Table XV presents the results of these tests.

TABLE XV. SUMMARY OF RESULTS OF SIGHT CALIBRATION TESTS

	Mean Radius (in.)	Center of Impact to Center of Bullseye (in.) x	y
100 Meters			
Group 1	3.9	+0.8	+0.4
Group 2	2.8	+2.9	0
Group 3	2.1	+0.5	-1.3
Average	2.9	+1.4	-0.3
300 Meters			
Group 1	12.8	-3.3	-0.5
Group 2	9.6	+2.7	-3.8
Group 3	12.2	+8.0	+6.0
Average	11.5	+2.4	+0.6
400 Meters			
Group 1	10.1	+10.3	+1.5
Group 2	10.9	+1.3	-8.6
Group 3	9.5	+0.3	-12.4
Average	10.2	+4.0	-6.5

6. FLASH TEST

The PKM Machine Gun, Serial No. IP378, was prepared and fired in accordance with MTP 3-2-045 and Section III, Paragraph 3b, above. Figures 11 and 12 are the photographic results of the cumulative flash of twenty (20) rounds fired in short bursts to achieve a rate of fire of approximately 85 rounds per minute.

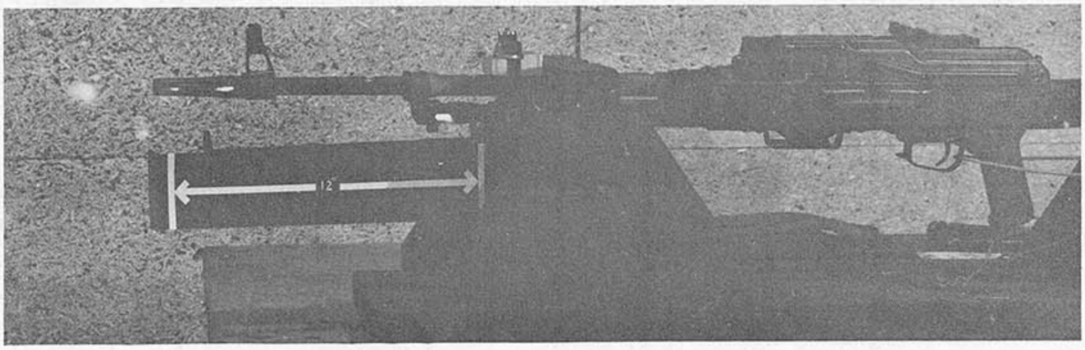

Figure 11. Flash Test of Ambient Temperature Barrel

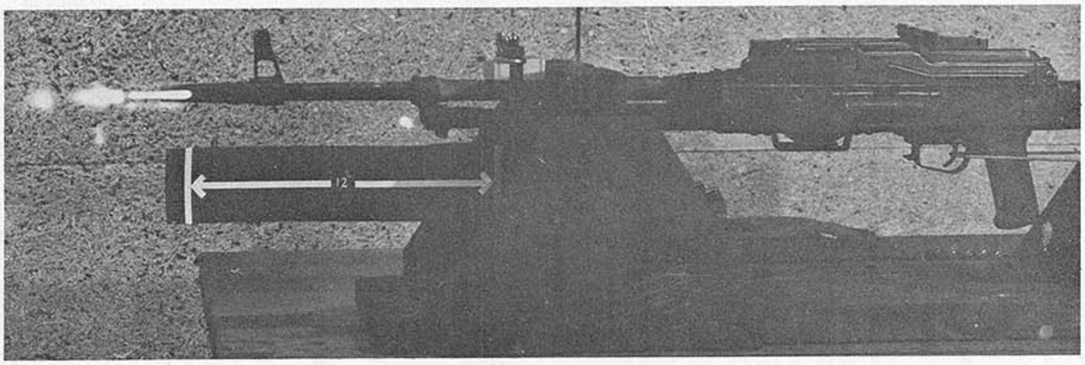

Figure 12. Flash Test of Hot Barrel

7. SMOKE TEST

Inspection of photographic records of the smoke produced by a 25-round burst and direct observations of test personnel indicate slight accumulations of smoke are discernible from the gun position and from a position 100 meters downrange. (See Figures 13, 14, 15, and 16)

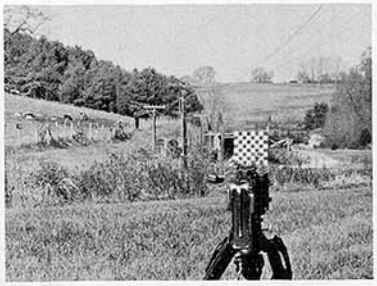

Figure 13. Prior to Firing (Gun Position)

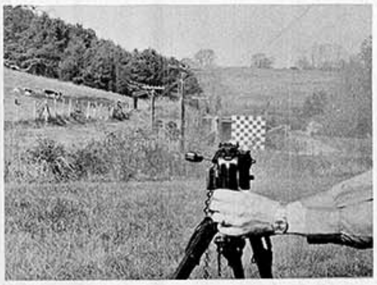

Figure 14. After Firing of 25 Rounds (Gun Position)

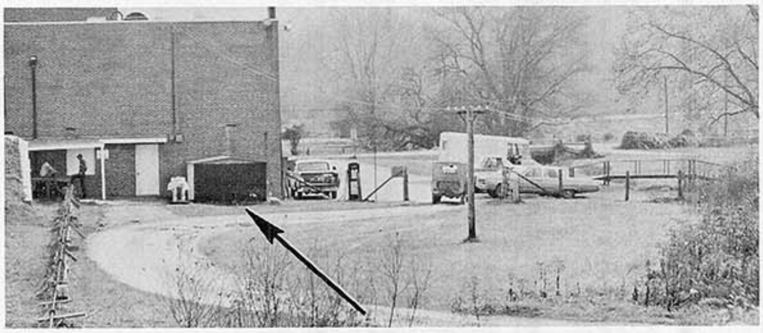

Figure 15. Prior to Firing (Downrange Position)

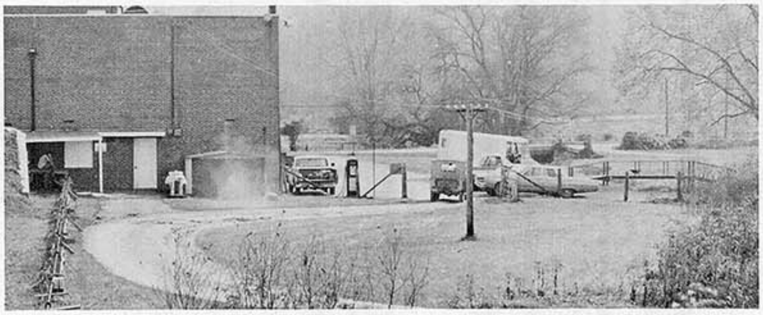

Figure 16. After Firing of 25 Rounds (Downrange Position)

8. NOISE TEST

The PKM Machine Gun, Serial No. IP378, was prepared and fired in accordance with the procedure contained in MTP 3-2-811. A total of twenty (20) rounds were fired - ten (10) each with the transducer in a position representing a right-handed shooter's left ear and 2 meters to the right of the muzzle with the following results:

TABLE XVI. SUMMARY OF RESULTS OF NOISE TEST

	Peak Pressure (db)			Positive Pressure Duration (millisec)			Positive Pressure Envelope Duration (millisec)		
	Max	Min	Ave.	Max	Min	Ave.	Max	Min	Ave.
Ear	149	144	146.1	1.00	.15	.40	1.00	1.0	1.00
Muzzle	158	156	156.8	.38	.30	.32	.38	0.3	0.32

9. ATTITUDE TEST (PARA 6.2.6)

The Attitude Tests were performed in accordance with Paragraph 6.2.6 and Table VI (0° elevation) of MTP 3-2-045. Four (4) malfunctions were encountered of which three (3) were attributable to the ammunition (insensitive primer-1 and deformed cases-2). The malfunction attributable to the gun was a failure to eject.

10. COOK-OFF TEST (PARA 6.2.7)

The PKM Machine Gun, Serial No. IP378, was prepared and fired in accordance with Paragraph 6.2.7 of MTP 3-2-045 and Section III, Paragraph 3g, above. A total of 2210 rounds were fired in eight (8) tests. Cook-off occurred after firing 260 rounds in a single continuous burst but would not occur in five (5) test firings of 250 rounds.

TABLE XVII. SUMMARY OF RESULTS OF COOK-OFF TEST

Cook-Off		Temperature (°F)			
Rounds Fired	Time (sec)	4" Forward of Chamber	2" Behind Gas Port	2" Forward of Gas Port	Flash Suppressor
260	17	915	1010	1065	815
250	NA	882 (ave.)	975 (ave.)	1041 (ave.)	792 (ave.)

11. ENDURANCE TEST (PARA 6.2.8)

The PKM Machine Gun was tested in accordance with Paragraph 6.2.8 and Table VII of MTP 3-2-045 except that the test sample had been fired in earlier tests of this program (13,859 rounds). Accordingly, the procedure was altered to include the previous firings in the total required by Paragraph 6.2.8 (25,000). All firings in this test were conducted with 7.62 x 54R, Ball, Type L, Soviet ammunition and the gas regulator in Position 1. Table XVIII presents a summary of the results of this test.

TABLE XVIII. SUMMARY OF RESULTS OF ENDURANCE TEST

	Before this Test	After Endurance Testing
Rounds Fired	13,859	27,115
Bore Diameter (in.)	.3000	.301*
Groove Diameter (in.)	.3125	.3127*
Muzzle Velocity (fps)	2799	2833
Cyclic Rate (rpm)	700	693

Malfunctions: One (1) Failure to Extract attributable to the gun.
Five (5) Failures to Feed attributable to the gun (2) and Personnel Error (3)
One (1) Failure to Fire attributable to the ammunition

*Light to moderate pitting evident near throat.

12. UNLUBRICATED TEST (PARA 6.2.10)

Initial firing of the Unlubricated Test in accordance with MTP 3-2-045 (Paragraph 6.2.10) resulted in a high incidence of malfunction (cartridge case separation) which were initially attributed to the wear of the Bolt Locking Lugs and the increased headspace this caused. However, when these failures continued after replacement of the Bolt, it became apparent that this was not the cause. To that point all firings had been with ammunition from the same lot and suspecting this may have been the cause, a different lot of ammunition was selected. As previously stated, all lots contain a random mixture of steel and brass cases. The testing was completed with this ammunition, firing a total of 1000 rounds with worn Bolt (400 steel cased and 600 brass cased) and 600 rounds with the replacement Bolt (20 steel cased and 580 brass cased). Eight (8) malfunctions were encountered in firing 1600 rounds all of which were with the steel cased ammunition. Of these eight (8) malfunctions, all but one (1) were attributable to case separation. The malfunction attributable to the gun was a failure to eject. Table XIX is a tabulation of the cyclic rate of the PKM Machine Gun throughout this test.

TABLE XIX. CYCLIC RATE DURING UNLUBRICATED TEST

		Cyclic Rate				Cyclic Rate	
Case	Bolt	Round Sequence Number	RPM	Case	Bolt	Round Sequence Number	RPM
Steel	Worn	1-20	633	Brass	New	581-600	706
	Worn	21-40	633		New	601-620	679
	Worn	41-60	633		New	780-800	706
	Worn	201-216	722		New	801-820	690
	Worn	221-242	652		New	981-1000	714
	New	401-420	626		Worn	1001-1020	712
		AVERAGE	654		Worn	1021-1040	714
					Worn	1041-1060	706
					Worn	1221-1240	714
					Worn	1241-1260	714
					Worn	1581-1600	714
						AVERAGE	712

13. DYNAMIC DUST TEST (PARA 6.2.12)

The PKM Machine Gun was prepared and fired in accordance with MTP 3-2-045, Paragraph 6.2.12 without malfunction. Seven (7) automatic bursts of 34 rounds each (238 total) were fired in a total elapsed time of 2 minutes 17 seconds. The cyclic rate of the bursts slowly decreased from an initial rate of 703 RPM to 637 RPM.

Ammunition used in this test was of the same type (Ball, Type L, Soviet) as that which has malfunctioned in the preceeding test; however, the malfunctioning lot was set aside and the ammunition for this test selected from a new lot. (NOTE: All lots of Ball Ammunition used in this program were a random mixture of steel and brass cartridge cases.)

14. STATIC DUST TEST (PARA 6.2.13)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.13 of MTP 3-2-045 without malfunction.

15. MUD TEST NO. 1 (PARA 6.2.15)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.15 of MTP 3-2-045 without malfunction.

16. MUD TEST NO. 2 (PARA 6.2.16)

The PKM Machine Gun was prepared in accordance with Paragraph 6.2.16 of MTP 3-2-045, but would not fire with the conditioned ammunition, a clean belt of ammunition or after immersing the weapon in clean water. Proper operation was restored only by field stripping and thoroughly cleaning the weapon (See Figure 17).

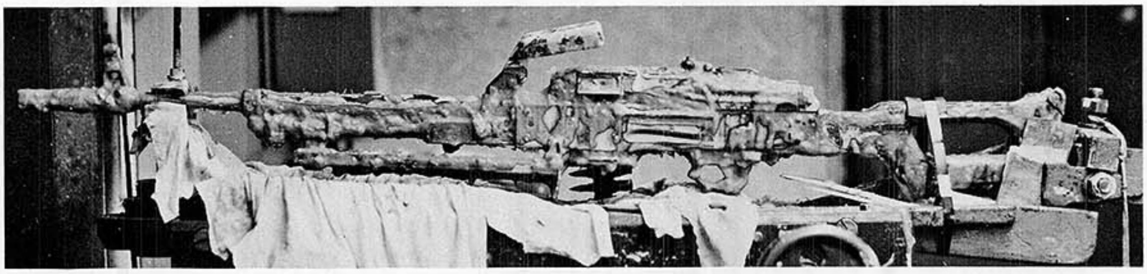

Figure 17. PKM Machine Gun During Drying Phase of Mud Test No. 2

Although the firing was unsuccessful, the PKM did strip the ammunition from the belt and feed properly; however, the Bolt energy lost because of the caked mud in the mechanism reduced the striking energy of the Bolt to that point which would only indent the primer without initiating primer action.

17. HIGH TEMPERATURE TEST (PARA 6.2.9.1)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.9.1 of MTP 3-2-045. Five (5) malfunctions were encountered in firing 6250 rounds of which four (4) were attributable to the ammunition and one (1) to personnel error.

18. WATER SPRAY TEST (PARA 6.2.11)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.11 of MTP 3-2-045 without malfunction.

19. ICING TEST (PARA 6.2.9.3)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.9.3 of MTP 3-2-045 without malfunction.

20. LOW TEMPERATURE TEST (PARA 6.2.9.2)

The PKM Machine Gun was prepared and fired in accordance with Paragraph 6.2.9.2 of MTP 3-2-045. Sixty-five (65) malfunctions were encountered during the firing of 12,860 rounds of which seven (7) were attributable to the gun. Four (4) of these seven (7) malfunctions were caused by the failure of the Cartridge Gripper to ride over the cartridge rim and extract the cartridge from the belt. One (1) of the seven (7) gun malfunctions was a failure to eject for which no explanation could be found. The remaining two (2) gun malfunctions were due to component breakage--only one (1) of which resulted in a stoppage. After a total of 43,249 known firings in this program, the Extractor Spring fractured (See Figure 18) which resulted in a stoppage. After replacement of this part and a total of 45,595 firings, the Flash Suppressor fractured in two (2) places but did not result in a stoppage (See Figure 19).

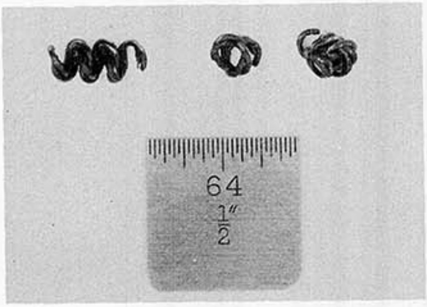

Figure 18. Broken Extractor Spring

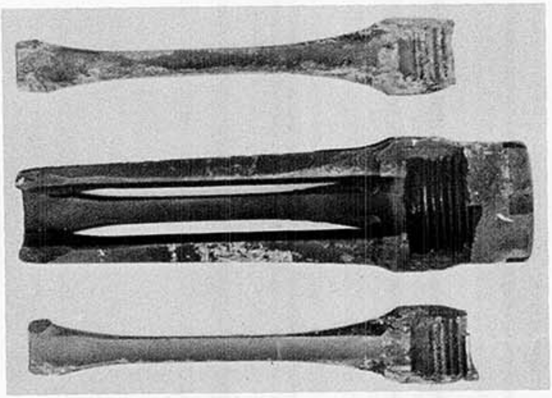

Figure 19. Broken Flash Suppressor

SECTION V. CONCLUSIONS

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1. GENERAL

The following paragraphs are intended to provide an overall evaluation of Reliability, Performance and Human Factors based on the data of the preceding section and the observations of test personnel.

2. PERFORMANCE

The procedures of MTP 3-2-045, Paragraph 6.2.5 and Appendices A and B provide a means of evaluating the relative accuracy and dispersion of two or more types of machine guns but do not provide a convenient means of evaluating the relative accuracy and dispersion of several configurations of the same weapon. All tripod firings were conducted at a range of 1000 inches in accordance with the procedures of Appendix A while all bipod firings were conducted at 100 meters in accordance with the procedures of Appendix B and neither procedure required the PKM to be fired in its Anti-Aircraft mount configuration.

Accordingly the following supplemental accuracy and dispersion tests were conducted:

Machine Rest, Semi-Automatic Fire, 100 meters

Machine Rest, Automatic Fire, 100 meters

Tripod, Low Setting, Semi-Auto, Hard Ground, 100 meters

Tripod, High Setting, Semi-Auto, Hard Ground, 100 meters

Tripod, Low Setting, Automatic, Hard Ground, 100 meters

Tripod, High Setting, Automatic, Hard Ground, 100 meters

Anti-Air Mount, Automatic, 100 meters

Anti-Air Mount, Semi-Auto, 100 meters

Machine Rest, Semi-Auto, 1000 inches

Bench Rest, Semi-Auto, 1000 inches

Bench Rest, Automatic, 1000 inches

Bipod, Automatic, 1000 inches

Bipod, Semi-Auto, 1000 inches

Tripod, Low Setting, Semi-Auto, Hard Ground, 1000 inches

Tripod, High Setting, Semi-Auto, Hard Ground, 1000 inches

Anti-Air Mount, Semi-Auto, 1000 inches

Anti-Air Mount, Automatic, 1000 inches

Tables XX and XXI consolidate the results of the supplemental accuracy and dispersion tests with those performed in accordance with MTP 3-2-045.

TABLE XX. ACCURACY AND DISPERSION AT 1000 INCHES

	Groups/ Rounds	Average Mean Radius (ins.)	Average Extreme Spread 0° Defl.(ins.)	
			x	y
Semi-Automatic Fire				
Machine Rest	3/30	0.7	2.6	1.7
Bench Rest	3/30	0.9	2.3	2.8
Tripod Low Setting (Hard Ground)	3/30	0.9	2.7	2.1
Tripod High Setting (Hard Ground)	3/30	0.9	2.1	2.5
Bipod (Hard Ground)	3/30	0.8	2.0	2.3
Tripod Anti-Air Mount(Hard Ground)	3/30	0.6	1.8	2.2
Automatic Fire				
Machine Rest	5/100	0.7	2.2	2.2
Bench Rest	3/30	2.4	6.7	4.9
Tripod Low Setting (Hard Ground)	5/100	3.0	11.1	5.6
Tripod High Setting (Hard Ground)	5/100	5.2	15.8	14.1
Bipod (Hard Ground)	3/30	2.0	5.9	3.0
Tripod Anti-Air Mount(Hard Ground)	3/30	3.0	8.7	6.9

TABLE XXI. ACCURACY AND DISPERSION AT 100 METERS

	Groups/ Rounds	Average Mean Radius (ins.)	Average Extreme Spread (ins.)	
			x	y
Semi-Automatic Fire				
Machine Rest	3/30	1.8	4.5	5.2
Bench Rest	5/50	2.7	6.4	9.2
Tripod Low Setting (Hard Ground	3/30	3.4	6.7	11.0
Tripod High Setting (Hard Ground)	3/30	3.4	11.0	7.5
Tripod Anti-Air Mount(Hard Ground)	9/90	3.6	8.1	13.0
Bipod (Hard Ground)	5/50	2.7	6.3	7.9
Automatic Fire				
Machine Rest	3/30	1.9	4.7	6.5
Bench Rest	15/300	8.4*	17.6	24.8*
Tripod Low Setting (Hard Ground)	3/30	7.3	19.3	12.0
Tripod High Setting (Hard Ground)	3/30	Unk**	Unk**	Unk**
Tripod Anti-Air Mount(Hard Ground)	9/90	11.9*	24.7*	28.2*
Bipod (Hard Ground)	15/300	8.3*	21.1*	25.1*

*Average does not include groups for which one or more rounds missed target.

**One or more rounds of all groups missed target.

Inspection of the data reveals that the overall controllability of the PKM Machine Gun is consistent with that of contemporary automatic weapons and that its optimum performance is likely to be obtained in the Bipod configuration firing short bursts. Despite the additional weight (10 pounds) of the Tripod, the only significant advantage to its use is the increased degree of freedom in traverse offered by the Tripod when used in a suppressive fire or area fire role and the increased controllability the Tripod offers in prolonged bursts.

3. RELIABILITY

During the test program, 49,613 rounds were fired after which the PKM Machine Gun was still in serviceable condition. The program was, therefore, extended to the limits of the availability of ammunition in order to provide additional reliability and malfunction data. The 6466 additional rounds were fired in accordance with the procedures of the Endurance and Reliability Test, Paragraph 6.2.8 of MTP 3-2-045. These additional firings brought the total rounds fired in the program to 56,076. Discounting the malfunctions attributable to personnel error and ammunition and those malfunctions of a repetitive nature (Paragraph 6.1.5 of MTP 3-2-045), the PKM malfunction rate was one in every 3299 rounds fired for the entire test program. However, since two (2) of the malfunctions did not cause a stoppage, the rate of stoppages is reduced to one (1) in every 3739 rounds fired.

TABLE XXII. SUMMARY OF MALFUNCTIONS

	Rounds Fired	Malfunctions	
		Gun	Other
Less Than Severe Tests			
Accuracy	6289	0	0
Flash	300	0	0
Smoke	50	0	0
Noise	20	0	0
Belt Pull	100	0	0
Attitude	4800	1	3
Endurance & Reliability	13256	3	4
Supplemental Endurance & Reliability	6466	4	1
Set-Up, Demonstrations, Etc.	840	0	0
TOTAL	32,121	8	8
Severe Tests			
Cook-Off	2210	0	1
Unlubricated	1600	1	7
Dynamic Dust	238	0	0
Static Dust	50	0	0
Mud No. 1	50	0	0
Mud No. 2	50	1	0
High Temperature	6250	0	5
Water Spray	600	0	0
Icing	50	0	0
Low Temperature	12860	7	58
TOTAL	23,958	9	71
TOTAL ALL TESTS	56,079	17	79

Of the malfunctions attributable to the gun, the most prevalent was Failure to Feed which occurred at a rate of one in every 6231 rounds fired.

TABLE XXIII. MALFUNCTIONS ATTRIBUTABLE TO THE GUN

	Number	Rate
Failure to Feed	9	1/6231
Failure to Eject	3	1/18,693
Failure to Extract	1	1/56,079
Failure to Fire	1	1/56,079
Broken Extractor Spring	1	1/56,079
Broken Flash Suppressor	1*	1/56,079
Broken Belt Exit Port Cover	1*	1/56,079
TOTAL	17	1/3299

*No stoppage involved.

Of the seventeen (17) malfunctions, eleven (11) occurred after the Machine Gun was known to have fired 36,003 rounds during this test program. If that figure is used as more representative of usage between major refurbishings, the malfunction rate is reduced to one (1) in every 6000 rounds fired and the most prevalent malfunctions--Failure to Feed and Failure to Eject--occurred at a rate of one (1) in every 18,001 rounds fired (See Table XXIV).

TABLE XXIV. GUN MALFUNCTIONS IN 36,000 ROUNDS

	Number	Rate
Failure to Feed	2	1/18,001
Failure to Eject	2	1/18,001
Failure to Extract	1	1/36,003
Failure to Fire	1	1/36,003
TOTAL	6	1/6000

In order to evaluate the endurance of the barrel of the PKM Machine Gun and provide an indication of the effect of extended usage or performance, velocity, rate of fire, yaw, bore and groove diameters were periodically recorded throughout this testing program. Table XXV is a tabulation of this data.

TABLE XXV. BARREL PERFORMANCE DATA

Rounds Fired	Average Velocity (fps)	Rate of Fire (RPM)	Groove Diameter (ins.)	Bore Diameter (ins.)	Yaw
830	2749	723	.3125	.3000	None
13,859	2799	700	.3125	.3000	None
24,595	2801	690	Unk	Unk	None
27,055	2833	693	.3127	.3010	None
28,715	Unk	712	Unk	Unk	Unk
35,353	2745	712	.3127	.3010	None
49,613	2580	750	.3127	.3012	None
56,079	2380	646	.3128	.3012	Extreme*
Variation	421	104	.0003	.0012	NA

*See Figures 20 and 21.

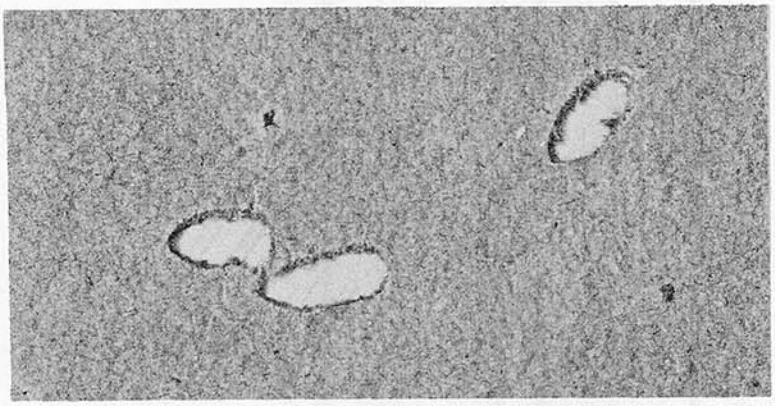


Figure 20. Yaw Card after Completion of 56,079 Firings

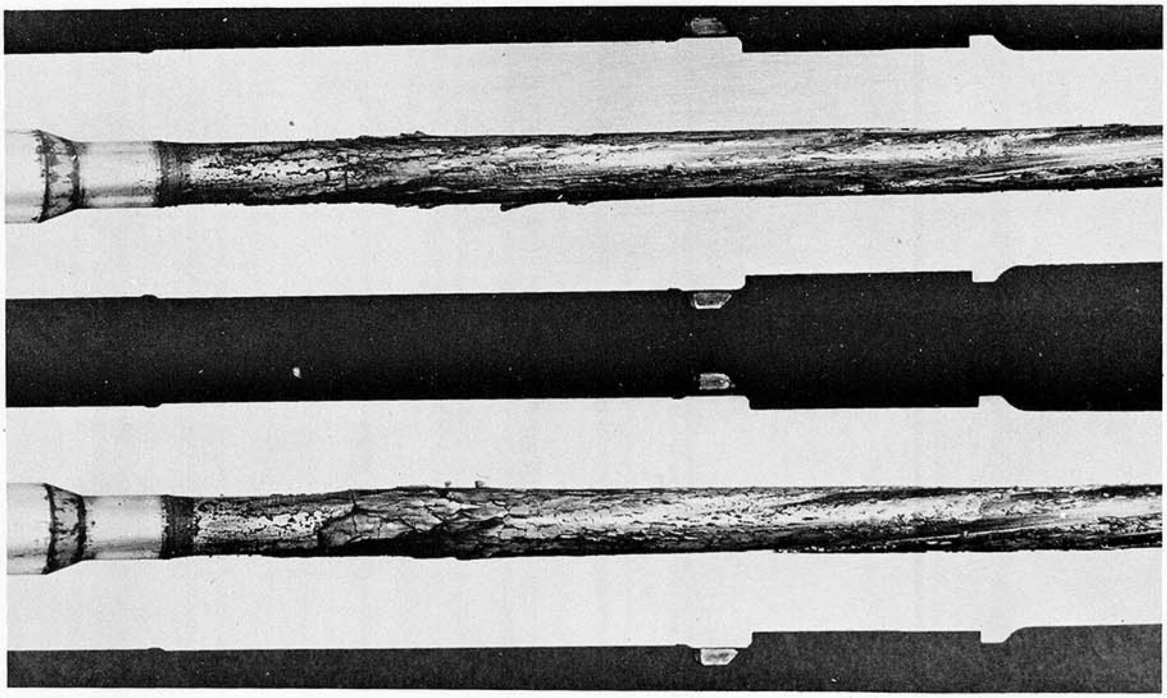


Figure 21. Barrel Sectioned after Completion of Testing to Illustrate Erosion of Barrel Caused by 56,079 Rounds

The entire test program of 56,079 firings was conducted with three (3) ammunition belts without a single failure of these belts or malfunction attributable to the belts (See Figure 22).

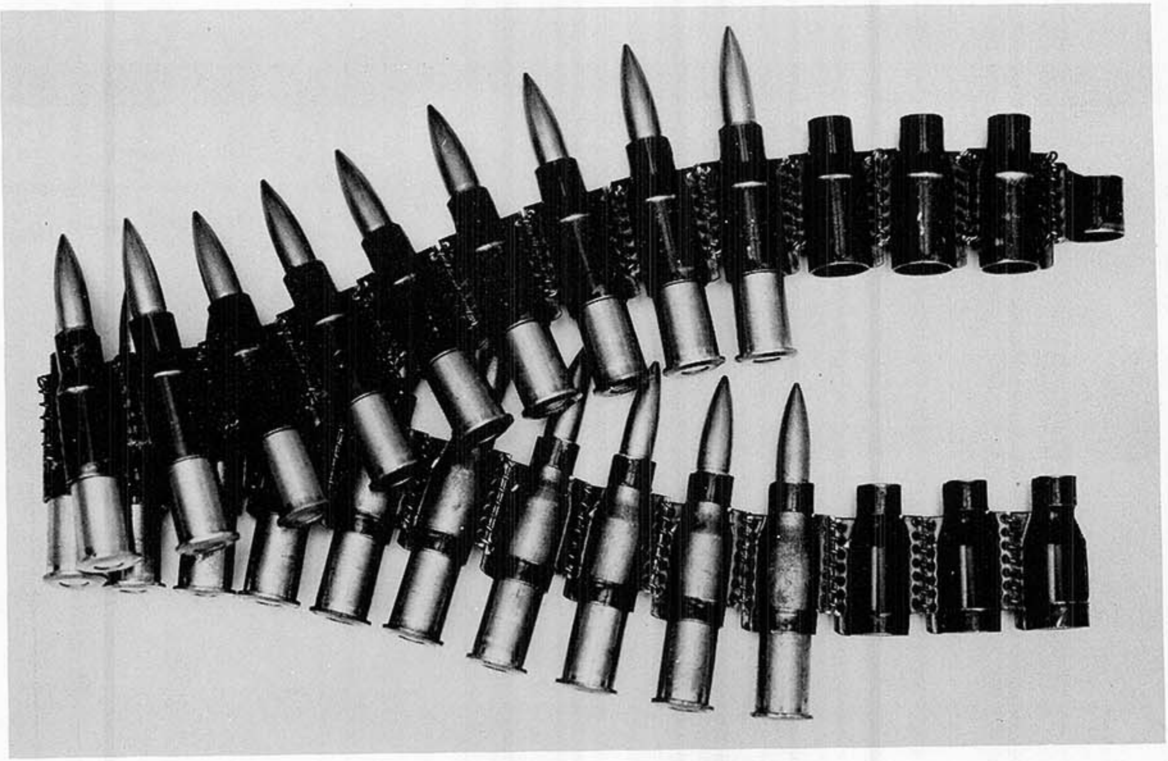


Figure 22. Belt, Following Section, FOM 2-1005-6-7.62-31-1

4. MISCELLANEOUS

During this program, several factors relating to reliability and performance were observed. Of these, the quality and condition of the ammunition was the most significant. Frequent stoppages were encountered as a result of cartridge case separation (See Figure 23).

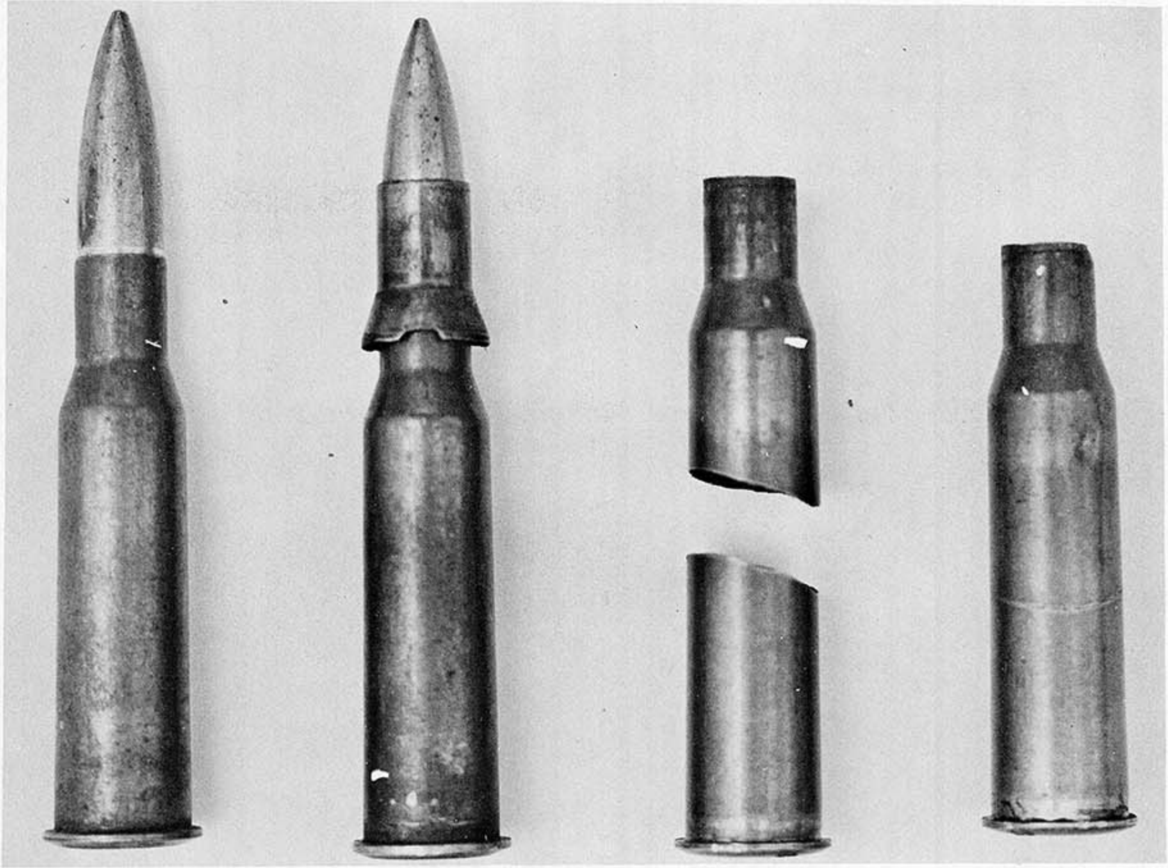


Figure 23. Test Ammunition. Unfired round (left), neck of separated cartridge case into which next round was fed (left center), separated cartridge case (right center), fired case with incipient separation (right). (Typical)

Examination of the fired cartridge cases which had not separated and unfired cartridges were found to contain a large percentage which had splits, severe bulging and physical deformations (See Figures 24 and 25).

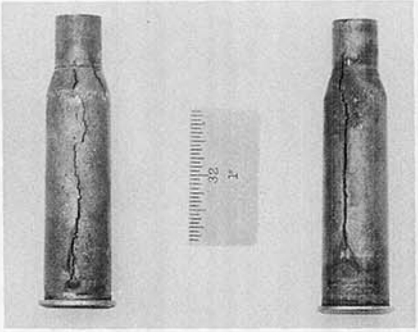


Figure 24. Cases Fired Without Malfunction But Which Had Split.

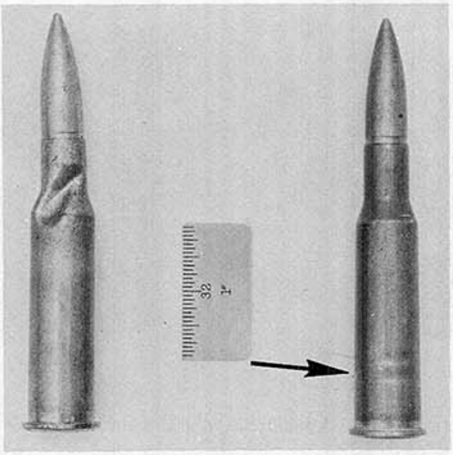


Figure 25. Unfired Cartridges. Note extreme deformation of left cartridge case and more subtle bulging of case on right.

Although the ammunition used in these tests was supplied in sealed containers, many of the cartridges were coated with corrosion (See Figure 26). While the more severely corroded cartridges were discarded, no attempt was made to eliminate from usage--or refurbish--the more lightly corroded ammunition.

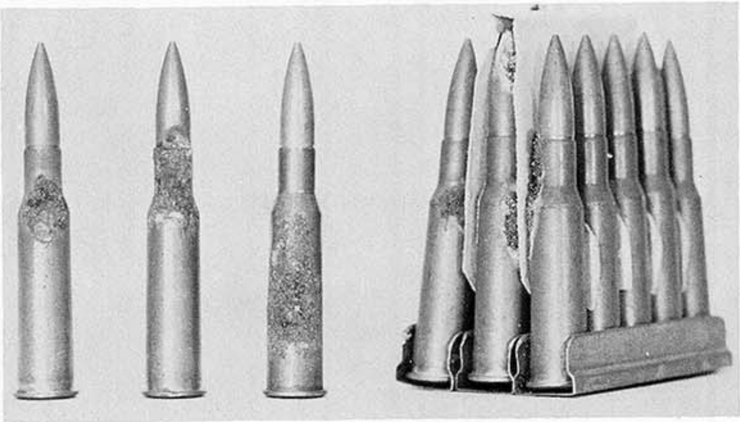


Figure 26. Examples of Extreme Corrosion of Test Ammunition

Test personnel were unanimous in their opinion regarding the relatively light shoulder impulse associated with the PKM Machine Gun; however, when firing continuous bursts of 5 or more rounds, the shooter will be pushed rearward reducing his control of the weapon. While this reaction is free of discomfort, the dispersion of such a group is effected by this "push."

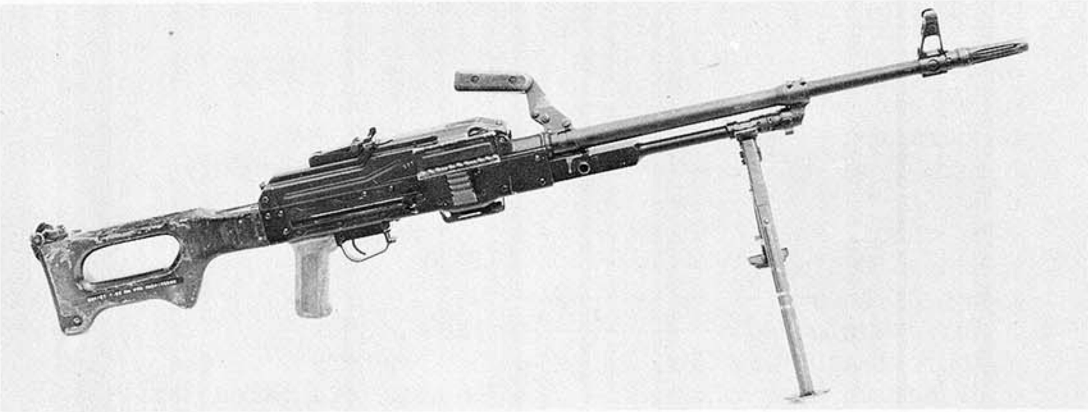
5. SUMMARY

Generally a test series of this type is conducted with a much larger sampling to insure that the stress of one test is not erroneously attributed to a subsequent test. It is, therefore, noteworthy that the single sample of the PKM Machine Gun subjected to the cumulative stress of this entire series completed these tests in serviceable condition with a malfunctioning record comparable to the most reliable of contemporary weapons (only one functional component--extractor spring--failed during these tests). The PKM Machine Gun compiled this remarkable record despite the quality of the ammunition used in testing and without compromise of overall system weight or performance.

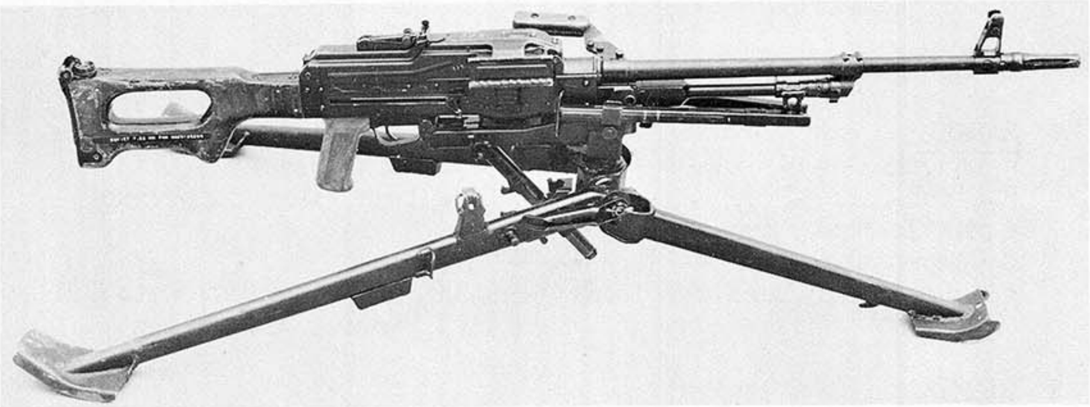
APPENDIX A

CHARACTERISTICS DATA SHEET

Nomenclature: Machine Gun, 7.62mm x 54R, PKM, General Purpose (Soviet)
Item: FOM 2-1005-4-7.62-20-3
Country: USSR
Adopted: 1964
Native Designation: NA



PKM Machine Gun



PKM, Tripod Mounted

The PKM Machine Gun is the current, general purpose machine gun used by the Soviet Armed Forces. The PKM is the newest of the PK family of open-bolt-fired, gas-operated, rotary-locked-bolt (KALASHNIKOV), belt-fed, fully automatic weapons. In addition to the Bipod and Tripod configurations, the Tripod may be quickly converted to an anti-aircraft mount.

Nomenclature: Machine Gun, 7.62 x 54R, Model PKM,
General Purpose (Soviet)

1 CURRENT STATUS: ---------------- Standard

2 WEAPON:
a Caliber ---------------------- 7.62 x 54R
b Operation -------------------- Gas
c Fire Type -------------------- Full Automatic Only
d Cyclic Rate ------------------ 690-720 rpm
e Practical Rate of Fire ------- 250 rpm
f Length Overall --------------- 47.0 inches
g Weight Loaded ---------------- NA
h Weight Unloaded -------------- 18.5 pounds
i Approximate Max. Hor. Range -- 3800 meters
j Effective Combat Range ------- 1000 meters (area targets)

3 FEED:
a Type ------------------------- Belt (Non-Disintegrating Links)
b Location --------------------- Right to Left
c Belt Capacity ---------------- 25 and 250 rounds (joinable 25 round sections)
d Magazine Release Location ---- NA

4 BARREL:
a Length ----------------------- 23.75 inches
b Flash Hider-Type ------------- Bar-Type Flash Suppressor
c Muzzle Brake Type ------------ NA
d Compensator Type ------------- NA
e Approximate Muzzle Velocity -- 835 m/s (2741 fps) with Ball, Type LPS, Soviet Ammunition

5 SIGHTS:
a Front Type-------------------- Protected Post
b Rear Type -------------------- Rectangular Notch, Tangent Ramp
c Rear Sight Graduation -------- 100-1500 meters in 100-meter increments and battle setting of approximately 330 meters
d Adjustment ------------------- Front Sight: zero only
Rear Sight: elevation and windage
e Optical Sight Type ----------- NA
f Power ------------------------ NA

Nomenclature: Machine Gun, 7.62 x 54R, Model PKM,
General Purpose (Soviet)

6 ACTION:
a Locking Feature Type --------- Rotary bolt
b Bolt Position Manual --------- NA
c Semi-Automatic --------------- NA
d Full-Automatic --------------- Fire from open bolt
e Trigger Type ----------------- Spur
f Safety Type ------------------ Rotary selector (safe or fire)
g Location --------------------- Left side trigger guard

7 STOCK:
a Type ------------------------- Fixed
b Material ---------------------Wood (Laminated)

8 AMMUNITION: ------------------- 7.62 x 54R, Ball, Tracer, API

APPENDIX B

TEST AND INSPECTION DATA SHEETS

SAFETY CERTIFICATION TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Procedure: The test weapon was disassembled prior to initiation of first firing test and upon completion of last firing test and the following components cleaned and subjected to dye penetrant tests (Zyglo) in accordance with the intent of Paragraph 6.2.1.4 of MTP 3-2-045:

Piston
Slide
Cartridge Gripper
Bolt
Firing Pin
Barrel

Result: No defects were noted in any of the above components.

INSPECTION AND TESTS FOR CHARACTERISTICS DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

GENERAL

The PKM Machine Gun is chambered for the 7.62 x 54R cartridge. The weapon is fired from the shoulder and is equipped with a permanently installed collapsible bipod. Optional firing configuration includes a ground mount tripod which may be adaptable to a vehicular mount. In addition the weapon may be fired with a sandbag or other "bench" type of support. The PKM Machine Gun and the optional tripod are equipped with features which are probably intended to accommodate an ammunition box.

PHYSICAL CHARACTERISTICS

Size

Length: 47 inches
Height: 10 inches
Width: 4 1/4 inches

Weight

Machine Gun: 18 1/2 pounds
Tripod: 10 pounds

Barrel

Length: 23 3/4 inches without flash suppressor
Grooves: 4
Twist: Right hand, 1:10 3/4 inches
Bore: 0.3000 inch
Groove: 0.3125 inch
Attachment: Quick change with sliding cam which also adjusts headspace.
Muzzle Attachment: Bar type flash suppressor

INSPECTION AND TESTS FOR CHARACTERISTICS DATA (Continued)

Sights

Front: Open post with protective ears. Threaded for adjustment in elevation only.

Rear: Open leaf sight with square notch. Adjustable in windage and elevation.

Radius: 26 1/6 inches

Rear Sight Graduations: 100-meter increments from 1 to 15 with battle setting of approximately 330 meters

Rear Sight to Butt: 16 3/4 inches

Sight Adjustment: The front sight is adjusted in elevation only with a tool supplied in cleaning kit. The rear sight is adjusted in windage and elevation by spring loaded detents.

Miscellaneous

Firing Pin Protrusion: 0.061 inch
Trigger Pull: 8 1/2 pounds and 0.185 inch
Headspace: Adjustable
Charging Force: 47 pounds
Receiver Length: 15 1/2 inches
Charging Handle: 1 9/16-inch projection from right side of receiver
Cleaning Kit: Brush, punch, cleaning rod tip, sight adjusting tool, cleaning rod handle (cleaning kit case), oil reservior and brush. Cleaning rods stored in legs of bipod.

OPERATION

Type: Gas operated. Not adjustable for rate of fire. Three (3) position gas cylinder compensates for sluggish operation due to temperature variations, dirt, grease, etc.

Mode of Fire: Full automatic only
Mechanism: Fired from open bolt
Feed: Belt fed (metallic links)
Extraction: Claw type
Ejection: Fixed (riveted to receiver)

INSPECTION AND TESTS FOR CHARACTERISTICS DATA (Continued)

Field of Fire (tripod only): 73.5° right or left traverse
+23°, -10° elevation

Field of Fire (tripod-AA): 360° traverse
+81 1/2°, -4 1/2° elevation

Miscellaneous

Time to Field Strip: 28 seconds (no tools)
Time to Reassemble: 47 seconds (no tools)
Time to Assemble to Tripod: 15 seconds (no tools)
Time to Remove from Tripod: 13 seconds (no tools)
Time to Convert to AA Mount: 32 seconds (no tools)

INSPECTION AND TESTS FOR CHARACTERISTICS DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: Various

Instrumentation: Lumiline screens (Oehler Type 55) at 5 feet and 25 feet, Time Interval Counter (Oehler, Type 41B)

Ammunition	Bullet Weight* (Grains)	Propellant Weight* (Grains)	Assembled Cartridge Length* (Inches)	Velocity (fps)** at 12.5 feet		
				Max	Min	Max Var
Type 53, Chinese, Ball (FOM 5-1305-1-7.62-5-1)	148.7	46.2	3.016	2734.1	2646.2	98
Type L, Soviet, Ball (FOM 2-1305-1-7.62-3)	148.2	47.6	3.014	2794.8	2701.9	93
Type LPS, Soviet, Ball (FOM 2-1305-1-7.62-62-29)	147.0	48.9	3.016	2773.1	2698.3	75
Type 46, Soviet, Tracer (FOM 2-1305-1-7.62-14)	151.5	48.0	3.020	2783.1*	2512.2*	271*
Type 53, Chinese, API (FOM 5-1305-1-7.62-6-1)	155.0	48.8	3.012	2723.3	2692.1	31
Type B-32, Soviet, API (FOM 2-1305-1-7.62-1)	156.0	48.8	3.002	2826.0	2724.7	101

*Average of 10 round sample.
**Average of 20 round sample.

DOUBLE FEED SAFETY TEST DATA

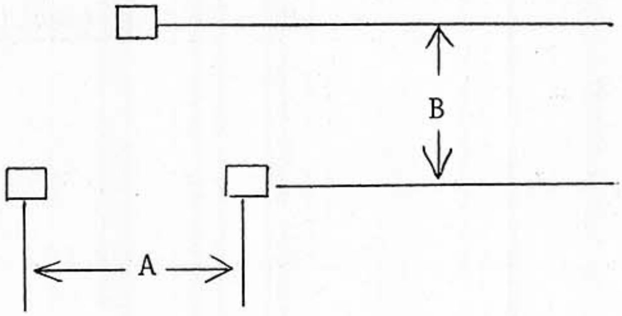
Weapon:	7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition:	Ball, Type L, M1908 (Soviet) Ball, Type LPS (Soviet) Tracer, Type 46, M-1930 (Soviet) API, Type B-32, M-1932 (Soviet) API, Type 53, (China)
Procedure:	Ten (10) rounds of each type with propellent removed (i.e., primed case with bullet) were tested in accordance with Paragraph 6.2.2.3 of MTP 3-2-045.
Result:	a) No instances of primer initiation were encountered. b) No instances of bullet contact with the primer were noted. Markings on the ammunition examined subsequent to each test indicate bullet tip of round being fed will strike base of chambered cartridge well above the primer.

ACCURACY AND DISPERSION TEST DATA

Weapon: 7.62x54R, PKM Machine Gun (Soviet), Serial No. IP378
Gun Weight: 18.5 pounds
Tripod Mount: 10 pounds
Time to Assemble Gun/Tripod: 15 seconds
Time to Remove Gun/Tripod: 13 seconds

TRIPOD CONFIGURATION

	A (in.)	B (in.)	Height (in.)*	Field of Fire Limits (degrees)	
				Traverse	Elevation
Lowest Setting	29.4	43.5	11.9	37 R or L**	+23, -10
Highest Setting	23.0	24.5	25.4	33 R or L**	+23, -10
AA Configuration	23.0	24.5	39.0	360	+81 1/2, -4 1/2



PADS ON BOTTOM OF TRIPOD LEGS

*From ground to highest point on tripod.
**Adjustable stops are provided to reduce traverse.

ACCURACY AND DISPERSION DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type L, Ball, Soviet (20 rounds)
7.62 x 54R, Type 53, Ball, Chinese (20 rounds)

Instrumentation: B & K Transducer
Tektronix Oscilloscope, RM565

Procedure: Cyclic rate of the PKM Machine Gun was determined for each of two (2), ten (10) round bursts with Soviet and Chinese ammunition. Firings were conducted from a machine rest with the weapon at ambient conditions for a two (2) hour period prior to each test.

Result:

	Rounds	Time (sec.)	Rate (rpm)
Soviet, Ball	10	.83	723
	10	.83	723
Chinese, Ball	10	.80	750
	10	.80	714

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches Firing Configuration: Full, machine rest,
Type L, Ball, (Soviet)

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+0.1	-3.5	-0.9	-8.1	+0.4	-6.8
2	-0.7	-3.1	-0.4	-9.5	+0.2	-7.5
3	-1.0	-3.4	+1.1	-7.0	+0.5	-8.8
4	-0.9	-3.8	+0.8	-8.5	+0.1	-9.3
5	-1.2	-4.2	+0.7	-7.8	-0.2	-9.9
6	-1.4	-4.5	+0.5	-7.6	-0.7	-7.9
7	-1.6	-4.8	+0.4	-7.2	-0.8	-7.6
8	-1.8	-4.9	+0.2	-7.5	-0.7	-7.5
9	-2.3	-4.6	+0.3	-7.9	-0.6	-7.4
10	-2.1	-4.1	+0.1	-7.9	-0.3	-8.0
11	-1.8	-4.2	-0.1	-8.2	-0.3	-8.7
12	-1.9	-4.4	-0.2	-8.3	0	-8.4
13	-2.4	-3.4	-0.6	-8.1	+0.1	-8.6
14	-2.2	-3.4	-0.5	-7.7	-0.1	-9.0
15	-2.0	-3.3	-0.2	-7.7	-0.4	-9.2
16	-2.1	-3.5	-0.1	-7.7	-0.3	-8.9
17	-1.6	-3.4	-0.4	-8.0	-0.3	-8.5
18	-1.4	-3.5	-0.3	-7.8	-0.4	-8.3
19	-1.5	-3.6	+0.2	-7.8	-0.2	-8.4
20	-1.7	-3.7	0	-7.8	-0.3	-8.5
Std Dev	0.6	0.5	0.5	0.5	0.3	0.7
Ext Spd	2.5	1.8	2.0	2.5	1.3	3.1
Center of Impact to Pt of Aim	-1.6	-3.9	0	-7.9	-0.2	-8.4
Mean Rad	0.7		0.5		0.6	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Full, machine rest, type 53 (China) API

Group	1st	
	x	y
1	-0.6	-6.4
2	-0.8	-6.9
3	-0.4	-7.2
4	-0.4	-7.3
5	-0.3	-7.5
6	-0.4	-7.7
7	-0.3	-7.8
8	-0.3	-8.0
9	-0.2	-7.9
10	+0.2	-7.8
11	+0.1	-7.5
12	+0.3	-7.3
13	+0.6	-7.4
14	+0.4	-6.8
15	+0.1	-6.9
16	0	-7.4
17	-0.2	-7.5
18	-0.2	-7.7
19	0	-7.6
20	+0.7	-8.1
Standard Deviation	0.4	0.3
Extreme Spread	1.5	1.7
Center of Impact to Point of Aim	0	-7.4
Mean Radius	0.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Full, machine rest, type B32 API (Soviet)

Group	1st x	1st y
1	-0.2	-5.6
2	-2.6	-6.2
3	-2.0	-5.2
4	-1.4	-7.9
5	-1.5	-7.7
6	-1.3	-7.0
7	-1.2	-6.9
8	-1.5	-6.8
9	-1.5	-6.6
10	-1.7	-6.9
11	-1.6	-7.0
12	-2.0	-7.3
13	-2.1	-7.6
14	-2.4	-7.0
15	-2.2	-6.7
16	-2.1	-6.1
17	-2.1	-5.8
18	-1.6	-5.7
19	-1.7	-6.1
20	-1.0	-6.3
Standard Deviation	0.5	0.7
Extreme Spread	2.4	2.7
Center of Impact to Point of Aim	-1.7	-6.6
Mean Radius	0.8	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Full, machine rest, Type 46 tracer (Soviet)

Group	1st x	1st y
1	-0.8	-6.6
2	-3.0	-6.2
3	-1.3	-6.3
4	-2.0	-5.6
5	-1.8	-5.9
6	-1.5	-6.9
7	-1.6	-7.0
8	-2.0	-6.9
9	-2.1	-6.6
10	-1.8	-6.2
11	-2.0	-6.1
12	-2.2	-6.2
13	-2.3	-5.9
14	-2.8	-6.1
15	-2.7	-6.1
16	-2.3	-6.3
17	-2.5	-6.4
18	-2.2	-6.5
19	-1.9	-6.4
20	-2.6	-6.2
Standard Deviation	0.5	0.4
Extreme Spread	2.2	1.4
Center of Impact to Point of Aim	-2.1	-6.3
Mean Radius	0.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Full, machine rest, Type LPS, Soviet, ball (white tip)

Groups	1st x	1st y
1	-1.2	-3.3
2	-1.4	-3.4
3	-0.8	-4.0
4	-1.2	-3.9
5	-1.6	-4.1
6	-1.5	-4.5
7	-1.4	-4.8
8	-1.7	-5.0
9	-2.1	-4.5
10	-2.5	-4.6
11	-2.2	-4.3
12	-2.3	-3.9
13	-1.9	-3.6
14	-1.7	-3.5
15	-1.8	-4.0
16	-2.0	-4.3
17	-2.0	-4.1
18	-2.2	-4.0
19	-1.5	-4.6
20	-1.4	-4.9
Standard Deviation	0.4	0.5
Extreme Spread	1.7	1.7
Center of Impact to Point of Aim	-1.7	-4.2
Mean Radius	0.6	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, machine rest, Type 53 (China), shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	+0.1	-3.5	-1.5	-2.0	-1.7	-1.6	-0.1	-1.6	-0.1	-5.0
2	-0.8	-2.0	-3.6	-2.5	-2.3	-1.5	-1.1	-3.9	-1.0	-5.3
3	-1.2	-2.1	-3.9	-2.5	-3.7	-3.9	-1.0	-3.4	-2.3	-5.8
4	-1.1	-3.5	-3.9	-2.7	-3.0	-3.8	-1.1	-2.4	-2.4	-7.2
5	-1.1	-3.1	-2.3	-3.8	-2.8	-3.9	-0.9	-2.2	-2.2	-7.1
6	-1.4	-3.2	-2.8	-3.7	-2.4	-3.5	-1.3	-2.2	-1.8	-7.1
7	-1.8	-3.1	-2.7	-3.2	-1.7	-2.5	-1.5	-1.8	-1.9	-6.6
8	-1.6	-3.4	-3.0	-3.1	-1.9	-2.5	-1.4	-1.6	-1.6	-6.6
9	-1.6	-3.8	-3.2	-3.0	-2.0	-2.8	-1.5	-1.9	-1.3	-6.5
10	-1.5	-4.1	-3.5	-3.1	-2.2	-2.9	-1.8	-2.0	-1.3	-6.1
11	-1.2	-4.2	-3.7	-3.2	-2.4	-3.1	-1.8	-2.5	-1.0	-6.2
12	-1.7	-4.1	-3.9	-3.3	-2.7	-3.0	-2.0	-2.8	-0.7	-6.2
13	-1.9	-4.1	-3.6	-3.6	-2.8	-3.0	-1.7	-2.8	-1.0	-6.6
14	-1.9	-4.0	-3.3	-3.8	-3.0	-2.9	-1.7	-3.2	-1.1	-6.7
15	-1.8	-3.7	-3.6	-4.2	-3.0	-2.8	-1.5	-3.0	-1.2	-6.7
16	-2.1	-3.5	-3.4	-4.0	-3.1	-2.7	-1.3	-3.0	-1.5	-6.8
17	-2.4	-3.9	-3.1	-3.9	-3.3	-2.8	-1.6	-2.8	-1.6	-6.8
18	-2.3	-4.1	-3.2	-3.3	-3.4	-2.7	-1.5	-2.6	-1.0	-7.3
19	-1.7	-4.1	-3.1	-3.6	-3.4	-2.9	-1.7	-2.3	-0.8	-7.1
20	-1.7	-3.9	-3.4	-3.5	-3.2	-3.0	-1.7	-2.7	-0.9	-7.1
Std Dev	0.5	0.6	0.6	0.6	0.6	0.9	0.4	0.6	0.6	0.6
Ext Spd	2.5	2.2	2.4	2.2	2.0	2.4	1.9	2.3	2.3	2.3
Center of Impact to Pt of Aim	-1.5	-3.6	-3.2	-3.3	-2.7	-2.9	-1.4	-2.5	-1.3	-6.5
Mean Rad	0.7		0.7		0.7		0.6		0.7	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, hard ground, zero defl., shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+0.2	+0.2	-3.4	-1.3	+8.8	+3.2	-1.4	+2.9	-6.5	-0.1
2	+0.2	-1.4	-3.5	-0.2	+8.5	+3.3	-2.7	+3.6	-9.0	+1.4
3	-0.9	+0.3	-0.6	+1.9	+6.9	+3.4	-3.2	+4.7	-9.1	+1.5
4	+0.2	+2.5	-0.2	+2.1	+5.7	+3.1	-2.6	+5.6	-10.0	+2.0
5	-0.9	+2.6	+0.3	+2.0	+5.1	+2.5	-4.2	+5.9	-9.2	+2.6
6	-2.0	+2.6	+0.1	+2.1	+4.0	+3.7	-4.5	+6.0	-9.0	+2.6
7	-2.1	+1.5	-0.4	+2.6	+1.0	+3.0	-5.3	+5.5	-9.0	+3.4
8	-2.4	+3.0	-1.9	+3.2	+0.7	+2.7	-5.3	+4.8	-11.0	+3.6
9	-2.4	+3.3	-2.0	+2.9	0	+2.5	-6.9	+4.9	-10.5	+4.4
10	-4.2	+1.9	-2.9	+3.4	+0.3	+3.0	-5.8	+6.2	-12.1	+4.2
11	-4.7	+1.8	-3.1	+3.3	+1.0	+4.1	-7.9	+6.2	-10.3	+5.0
12	-5.0	+1.8	-3.8	+2.9	+1.2	+4.9	-8.5	+7.1	-11.5	+5.4
13	-4.2	+2.9	-3.7	+2.5	+0.6	+4.4	-9.3	+5.9	-10.9	+5.7
14	-6.8	+1.1	-4.8	+1.7	+0.4	+4.6	-9.0	+5.1	-11.5	+6.1
15	-7.6	+1.8	-5.1	+2.1	-1.6	+4.0	-11.3	+7.5	-12.0	+5.8
16	-7.1	+2.4	-6.7	+2.5	-1.2	+4.4	-12.0	+6.4	-12.6	+5.4
17	-7.3	+3.5	-5.6	+3.7	-0.7	+5.4	-13.1	+5.4	-13.7	+6.3
18	-8.1	+3.6	-4.3	+4.0	-1.3	+6.5	-13.6	+6.9	-17.2	+7.2
19	-9.2	+2.9	-4.5	+3.2	-5.4	+5.5	-15.0	+7.5	-16.7	+6.3
20	-2.2	+1.6	-3.2	+3.4	-4.7	+8.2	-15.5	+5.3	-11.6	+6.1
Std Dev	3.0	1.2	2.0	1.2	3.8	1.4	4.3	1.1	2.5	2.0
Ext Spd	9.4	5.0	7.0	5.3	14.2	5.7	14.1	4.6	10.7	7.3
Center of Impact to Pt of Aim	-3.8	+2.0	-3.0	+2.4	+1.5	+4.1	-7.9	+5.7	-11.2	+4.2
Mean Rad	2.8		2.1		3.4		3.9		2.6	

ACCURACY TEST DATA

Range: 1000 inches

Firing Configuration: Full, tripod low, hard ground, max right, sh A.

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-3.3	+2.1	+0.4	+1.1	-0.9	-0.7	-1.0	+1.4	-0.5	+1.4
2	-1.2	+2.7	+1.5	+1.5	-0.7	-1.4	-2.7	+2.1	-0.8	+5.5
3	-4.3	+3.4	+1.9	+2.1	-3.4	+0.5	-0.8	+3.5	-0.4	+5.7
4	-4.7	+4.6	-0.1	+2.8	-3.0	+1.0	-1.2	+4.1	-0.2	+6.2
5	-4.5	+4.6	-0.7	+3.8	-2.8	+3.1	+1.6	+1.9	-1.9	+7.1
6	-0.8	+5.1	-2.5	+5.1	-0.9	+1.5	+1.8	+2.3	-1.6	+7.9
7	-0.4	+6.0	-3.2	+4.8	+1.1	+2.5	+2.9	+0.7	+0.5	+2.5
8	-0.6	+6.7	-3.4	+4.9	+1.3	+3.1	+0.8	+2.9	+0.7	+2.5
9	-0.3	+7.0	-4.4	+5.1	+2.0	+3.2	+0.5	+4.5	+0.7	+3.0
10	-1.1	+7.8	-3.5	+6.1	+1.9	+2.8	+0.8	+4.3	+1.9	+2.8
11	+0.8	+6.8	-3.9	+5.8	+1.9	+2.3	+1.6	+4.2	+1.4	+5.2
12	+0.2	+5.5	-4.6	+6.5	+2.7	+2.6	+2.2	+4.4	+1.8	+5.6
13	+0.8	+4.7	-4.9	+7.1	+3.6	+2.0	+2.4	+4.5	+2.5	+5.3
14	+0.3	+4.3	-5.4	+6.3	+4.6	+2.3	+2.5	+4.3	+2.7	+4.7
15	+2.4	+4.4	-5.6	+6.2	+4.9	+2.9	+2.9	+4.2	+2.5	+4.3
16	+2.8	+4.1	-5.0	+5.4	+3.4	+3.5	+2.1	+5.3	+3.7	+4.2
17	+1.8	+3.3	-7.0	+6.8	+4.1	+4.2	+2.6	+5.4	+3.4	+4.1
18	+3.2	+2.4	-7.0	+5.9	+4.6	+4.8	+3.8	+5.3	+3.3	+4.0
19	+1.0	+1.2	-5.5	+5.2	+5.5	+5.4	+3.8	+5.1	+3.2	+3.8
20	+2.3	+0.8	-5.5	+5.1	+5.4	+4.5	+3.9	+3.7	+2.6	+4.2
Std Dev	2.3	1.9	2.6	1.7	2.8	1.7	1.8	1.3	1.7	1.6
Ext Spd	7.9	7.0	8.9	6.0	8.9	6.8	6.6	4.7	5.6	6.5
Center of Impact to Pt of Aim	-0.3	+4.4	-3.4	+4.9	+1.8	+2.5	+1.5	+3.7	+1.3	+4.5
Mean Rad	2.8		2.6		2.8		2.0		2.1	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, hard ground, max left, sh. A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-17.5	+0.7	-0.8	-0.4	-3.5	-0.5	-3.0	+1.9	-12.0	+5.7
2	-12.9	+4.0	-1.9	+0.8	-3.8	+0.1	-3.1	+3.3	-10.1	+3.1
3	-12.5	+4.4	-1.0	+1.8	-3.4	+0.6	-3.2	+3.6	-7.2	+4.3
4	-12.5	+4.2	-3.2	+2.3	-4.2	+0.9	-4.4	+2.8	-7.9	+5.4
5	-12.2	+3.9	-3.6	+2.8	-2.1	+1.2	-0.6	+5.1	-10.4	+7.7
6	-11.4	+2.9	-2.2	+3.4	-1.2	+0.1	-0.5	+5.8	-5.9	+8.5
7	-10.1	+2.7	-1.7	+5.8	-1.5	+0.9	+0.9	+3.7	-4.5	+6.8
8	-9.9	+3.0	-4.3	+5.9	-0.7	+1.3	+4.2	+7.6	-5.6	+6.1
9	-9.7	+2.4	-4.6	+7.8	-3.2	+4.0	+7.4	+5.6	-6.1	+5.3
10	-8.9	+2.5	-6.4	+6.7	+1.4	-0.7	+12.4	+3.5	-6.1	+5.0
11	-8.2	+2.9	-7.7	+8.4	+1.6	-0.5	+13.7	+3.4	-4.3	+5.8
12	-8.9	+4.2	-8.9	+10.4	+10.6	-1.8	+15.0	+7.1	-5.1	+4.5
13	-8.3	+4.3	-1.0	+3.6	+12.2	-1.1	+14.0	+7.1	-4.0	+5.0
14	-11.1	+5.7	-0.8	+3.5	+13.4	-2.0	+13.2	+6.8	-2.2	+5.6
15	-9.5	+5.5	-0.5	+2.6	+14.9	-0.6	+15.3	+8.4	-0.7	+4.2
16	-8.2	+6.2	-0.2	+2.8	+18.4	-3.1	+9.9	+7.7	-3.3	+3.2
17	-6.6	+5.4	0	+4.1	+19.5	-2.2	+9.8	+8.0	-2.6	+2.1
18	-6.7	+6.3	+0.9	+4.2	+23.9	-3.1	+9.6	+8.4	-2.3	+1.5
19	-5.3	+7.4	+0.5	+2.4	+11.7	+0.3	+12.4	+9.8	+1.0	+3.6
20	-1.4	+2.4	+3.0	+0.7	+7.8	+2.6	+9.4	+11.0	+1.7	+1.9
Std Dev	3.3	1.6	2.9	2.7	9.0	1.7	6.9	3.5	3.5	1.8
Ext Spd	16.1	6.7	11.9	10.8	28.1	7.1	19.7	9.1	13.7	7.0
Center of Impact to Pt of Aim	-9.6	+4.1	-2.2	+4.0	+5.6	-0.2	+6.6	+6.0	-4.9	+4.8
Mean Rad	3.0		3.4		8.4		7.2		3.3	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, hard ground, sandbags, zero defl, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+0.1	+1.0	-0.1	+0.9	+1.1	0	+0.1	+0.8	+0.9	+0.1
2	+0.8	+2.3	+0.2	0	+0.8	+0.1	-0.2	+1.7	+1.0	+0.3
3	-0.8	+1.0	+1.2	-0.1	+0.2	+0.1	-0.9	+0.5	+0.5	+0.8
4	-0.7	-0.3	+1.1	-0.6	-0.2	+0.3	-1.0	+0.1	+1.3	+1.9
5	-1.9	-0.2	+2.3	-0.3	0	+1.0	-2.0	+0.6	-0.8	+0.2
6	-2.6	-0.4	+2.9	-0.8	+0.2	+1.7	-2.4	+0.7	-0.7	-0.7
7	-3.1	-0.5	+5.1	-1.1	+0.8	+1.8	-1.6	0	-0.4	-1.0
8	-3.3	-0.4	+4.6	-0.1	+1.2	+1.4	-0.2	-1.5	-0.2	-1.1
9	-2.9	+1.7	+1.6	+0.4	+2.0	+1.3	-1.1	-2.7	-0.5	-1.6
10	-3.0	+0.7	+2.3	+2.3	+0.7	-0.7	-1.6	-2.5	-0.9	-1.6
11	-3.3	+1.2	+3.8	+0.1	+2.4	-0.4	-3.3	-1.1	+2.0	-0.3
12	-3.6	+0.9	+4.6	+0.1	-0.3	-1.5	-2.4	-1.1	+1.7	-0.8
13	-3.7	+0.3	+5.0	+2.0	-0.4	-1.8	-1.7	-0.6	+2.3	-0.8
14	-5.9	+2.5	+4.8	+1.3	-0.7	-1.8	-1.5	-0.7	+1.6	-1.1
15	-4.5	+1.1	+4.3	+1.0	-0.5	+1.1	-1.4	-0.9	+2.6	-2.4
16	-4.8	+0.7	+4.3	+0.5	-1.1	+0.8	-1.1	-1.5	+1.0	-0.3
17	-5.1	+0.6	+3.0	+0.7	-1.9	+0.5	-1.2	-1.8	+0.7	-0.4
18	-4.9	+0.7	+3.1	+0.4	-1.6	+1.1	-1.5	-1.7	+0.8	-0.8
19	-4.7	+1.0	+3.3	+0.4	-1.3	+1.4	-1.8	-1.4	+1.1	-0.9
20	-4.5	+1.2	+3.5	+0.6	-0.7	+1.7	-1.8	-1.6	+0.8	-1.1
Std Dev	1.8	0.8	1.6	0.8	1.1	1.1	0.8	1.2	1.0	0.9
Ext Spd	6.7	3.0	5.2	3.4	4.3	3.6	3.4	4.4	3.5	4.3
Center of Impact to Pt of Aim	-3.1	+0.8	+3.0	+0.4	0	+0.4	-1.4	-0.7	+0.7	-0.6
Mean Rad	1.7		1.5		1.4		1.2		1.2	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, hard ground, sandbags, max right, shooter A.

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-0.7	+0.8	-2.6	-0.5	-0.7	+1.1	-0.9	-0.8	-1.5	-0.8
2	-0.6	+1.2	-2.2	0	-1.3	+1.7	-1.8	+0.1	+1.0	-1.5
3	-1.2	+1.1	-1.9	0	-1.6	+1.7	-2.0	+0.2	+1.3	-0.7
4	-1.7	+1.9	-2.2	+0.6	-1.7	+1.3	-2.2	+0.7	+1.5	-0.4
5	+0.4	+2.0	-1.6	+0.9	-2.7	+1.5	-1.2	+0.5	+1.4	+0.2
6	+1.5	+2.1	-1.5	+1.5	-3.5	+1.6	-0.3	+0.9	+2.1	+0.5
7	+1.0	+2.5	-1.1	+1.6	-3.5	+1.8	0	+1.0	+1.2	+0.7
8	+0.7	+2.6	-2.4	+1.1	-3.3	+2.0	-1.3	+0.9	+0.6	+0.9
9	+0.3	+2.5	-3.0	+1.5	-3.4	+2.2	-1.3	+1.2	+1.9	+1.1
10	+0.3	+2.9	-2.3	+1.6	-3.3	+2.4	-1.5	+1.0	+0.4	+1.8
11	-0.2	+2.5	-2.7	+2.1	-2.9	+2.7	-0.4	+1.9	+0.9	+2.2
12	-0.3	+3.0	-0.5	+2.9	-2.5	+2.9	-0.5	+2.1	+1.3	+2.3
13	0	+3.8	-2.1	+3.0	-1.8	+3.2	-1.0	+2.1	+1.1	+1.4
14	+1.0	+3.7	-2.3	+2.5	-1.6	+3.0	-1.0	+2.3	+1.3	+1.4
15	+1.5	+3.8	-2.0	+2.4	-1.5	+2.8	-0.4	+2.5	+1.6	+1.5
16	+1.0	+3.2	-2.0	+2.2	-1.1	+2.8	+0.1	+2.6	+1.3	+1.8
17	+1.3	+3.2	-1.8	+2.0	-0.8	+3.2	-0.4	+2.8	+1.5	+2.0
18	+1.6	+3.1	-2.0	+1.8	-3.2	+2.1	-0.9	+2.7	+1.8	+1.9
19	+0.4	+2.7	-2.1	+1.9	-2.3	+3.0	-1.1	+2.9	+1.4	+1.5
20	+1.3	+3.2	-2.1	+2.1	-1.7	+3.0	-1.0	+3.8	+1.5	+1.8
Std Dev	0.9	0.8	0.5	0.9	0.9	0.7	0.6	1.1	0.7	1.1
Ext Spd	3.3	3.0	2.5	2.5	2.8	2.1	2.3	4.6	3.6	3.8
Center of Impact to Pt of Aim	+0.4	+2.6	-2.0	+1.6	-2.2	+2.3	-1.0	+1.6	+1.2	+1.0
Mean Rad	1.1		0.9		1.1		1.2		1.1	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, hard ground, sandbags, max left, shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	+2.7	+2.4	+1.2	+2.8	+0.1	+2.8	-2.4	-1.0	-1.5	-0.9
2	+3.6	+2.7	+1.7	+2.9	-0.2	+2.2	-0.8	+0.3	-2.0	-0.3
3	+3.7	+3.5	+2.8	+3.5	-0.4	+3.0	-0.4	+0.3	-2.3	-0.2
4	+2.5	+4.2	+1.4	+3.7	-1.8	+2.7	-0.5	+0.9	-2.2	+0.6
5	+3.2	+4.3	+0.9	+3.8	-0.9	+3.5	-1.2	+2.4	-2.0	+0.4
6	+3.1	+5.0	+0.4	+3.8	-1.3	+4.4	-2.1	+2.2	-1.7	+0.2
7	+2.4	+5.2	+1.0	+4.1	-1.5	+4.6	-1.9	+1.6	-1.4	+0.4
8	+3.0	+5.2	+0.8	+4.2	-2.1	+3.9	-2.2	+1.2	-1.3	+0.8
9	+1.8	+5.6	+0.8	+4.7	-2.3	+4.1	-1.6	+1.0	-1.6	+0.9
10	+3.3	+5.9	+1.1	+4.7	-2.2	+5.6	-1.4	+0.9	-1.9	+1.1
11	+0.8	+6.2	+1.4	+4.8	-3.8	+3.2	-1.3	+1.2	-2.2	+1.3
12	+1.6	+6.2	+1.3	+4.5	-3.1	+3.8	-1.1	+1.4	-1.9	+1.4
13	+3.0	+6.3	+0.2	+4.8	-3.4	+4.1	-0.9	+1.7	-1.8	+1.7
14	+1.6	+7.0	0	+5.0	-3.9	+3.9	-1.1	+1.7	-1.6	+1.6
15	+3.6	+7.0	0	+4.8	-4.0	+4.0	-1.5	+1.5	-0.9	+1.3
16	+3.1	+7.1	-0.2	+4.4	-2.9	+4.4	-1.5	+1.2	-0.7	+1.5
17	+3.5	+7.3	-0.6	+4.0	-3.3	+5.0	-1.4	+1.4	-0.8	+1.8
18	+2.4	+7.4	-0.7	+3.3	-3.7	+4.5	-1.2	+1.5	-1.5	+2.4
19	+2.2	+7.4	-0.2	+3.5	-4.5	+4.7	-1.4	+1.1	-1.8	+0.7
20	+1.9	+7.7	0	+4.9	-1.4	+4.5	-1.5	+1.1	-1.8	+1.5
Std Dev	0.8	1.6	0.8	0.7	1.3	0.8	0.5	0.7	0.4	0.8
Ext Spd	2.9	5.3	3.5	2.2	4.6	3.4	2.0	3.4	1.6	3.3
Center of Impact to Pt of Aim	+2.7	+5.7	+0.7	+4.1	-2.3	+3.9	-1.4	+1.2	-1.6	+0.9
Mean Rad	1.6		1.0		1.4		0.7		0.8	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sod zero defl., shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-1.4	+0.8	-2.2	+0.1	-1.6	+1.1	-2.9	0	-3.2	-0.5
2	-2.4	+1.3	-1.3	+0.8	-0.8	+2.7	-1.3	+0.2	-2.4	0
3	-2.7	+1.1	-1.8	+1.7	-0.4	+3.3	-1.3	+0.8	-2.8	+0.3
4	-3.0	+1.7	-2.4	+1.6	0	+4.1	-0.3	+0.6	-1.2	+1.0
5	-3.5	+1.6	-2.6	+1.9	-0.2	+4.3	0	+0.9	-0.6	+1.6
6	-2.4	+2.2	-2.4	+1.8	+0.8	+4.7	-0.4	+1.7	-2.3	+1.5
7	-2.7	+2.6	-2.4	+2.5	+0.8	+5.1	-1.1	+2.4	-2.5	+1.2
8	-2.6	+2.7	-2.7	+2.5	-1.0	+4.0	-1.5	+2.3	-2.6	+1.1
9	-2.7	+3.2	-3.0	+3.2	-1.6	+4.0	-1.4	+3.1	-2.5	+0.9
10	-3.3	+3.1	-2.1	+3.0	-2.0	+4.1	-2.9	+3.2	-2.6	+0.7
11	-2.0	+3.7	-1.4	+2.5	-2.6	+3.2	-3.6	+2.5	+0.1	+2.2
12	-1.2	+3.4	-0.8	+4.3	-2.9	+3.8	-2.6	+2.6	+0.3	+2.3
13	-0.4	+2.7	+0.4	+4.2	-2.7	+4.6	-2.9	+2.1	-0.1	+2.4
14	+0.2	+2.5	-0.3	+3.4	-1.2	+5.0	-2.4	+1.6	+0.5	+3.2
15	-0.9	+3.9	-0.4	+3.1	-1.3	+5.3	-1.9	+1.3	-0.2	+3.1
16	-0.6	+4.0	-0.3	+2.8	-2.2	+5.3	-2.2	+1.0	-0.4	+3.7
17	-0.6	+4.5	+0.3	+2.7	-2.6	+5.5	-2.9	+1.0	-0.8	+2.7
18	-1.2	+4.3	+0.6	+2.3	-2.0	+5.6	-3.0	+1.2	-1.4	+2.6
19	-0.8	+5.5	+0.4	+2.1	-2.0	+6.0	-2.7	+1.1	-1.5	+2.8
20	-1.6	+5.8	0	+1.9	-2.7	+6.1	-2.8	+1.4	-2.1	+2.6
Std Dev	1.0	1.4	1.0	1.0	1.1	1.2	1.0	0.9	1.2	1.1
Ext Spd	3.7	5.0	3.6	4.2	3.7	5.0	3.6	3.2	3.7	4.2
Center of Impact to Pt of Aim	-1.8	+3.0	-1.2	+2.4	-1.4	+4.4	-2.0	+1.6	-1.4	+1.8
Mean Rad	1.6		1.4		1.5		1.3		1.5	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sod, max right, shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-2.1	+8.7	-0.4	+4.6	+1.7	-0.6	-1.8	+6.9	-0.6	+5.1
2	0	+1.7	-0.8	+5.0	+0.5	+0.9	-3.4	+2.1	+0.3	+2.4
3	+1.4	+8.8	-1.2	+4.5	-1.5	+2.4	-3.5	+4.8	+2.1	+5.5
4	+4.8	+9.4	-0.4	+5.5	-2.4	+2.9	-3.5	+5.9	+3.2	+5.3
5	+7.2	+8.9	-0.5	+5.7	-2.1	+3.2	-4.9	+5.3	+3.8	+5.2
6	+7.2	+13.0	-0.4	+6.5	-2.6	+3.8	-4.8	+5.2	+4.5	+5.0
7	+9.5	+12.8	-0.6	+6.5	-2.8	+3.8	-4.7	+4.0	+5.3	+4.5
8	+10.4	+14.5	-1.1	+5.5	-3.4	+3.7	-5.1	+3.5	+4.5	+3.4
9	+12.4	+13.2	-1.0	+5.6	-1.6	+4.6	-5.5	+4.4	+7.0	+5.2
10	+14.7	+16.0	-1.1	+5.9	-2.6	+4.7	-6.1	+4.3	+6.5	+5.6
11	+16.2	+15.2	-1.3	+6.1	-1.7	+5.9	-6.3	+4.4	+6.9	+6.0
12	+18.1	+15.6	-1.3	+8.2	-3.2	+3.2	-6.4	+4.2	+5.4	+6.2
13	+19.9	+15.9	+0.4	+5.8	-4.6	+4.1	-6.5	+3.9	+5.7	+6.4
14	+20.0	+14.9	+0.7	+5.8	-4.0	+5.5	-6.3	+3.6	+5.9	+7.0
15	+21.8	+16.0	+0.4	+5.5	-5.6	+4.2	-6.9	+4.2	+5.6	+7.6
16	+22.1	+15.7	+0.3	+5.3	-5.8	+4.4	-6.6	+4.8	+5.0	+7.9
17	+23.1	+18.6	+0.9	+3.3	-5.4	+4.5	-6.7	+5.4	+4.2	+7.9
18	+23.7	+19.2	+0.2	+1.9	-5.1	+5.0	-7.4	+5.0	+4.4	+7.1
19	+24.1	+19.4	+1.1	+2.1	-5.5	+5.9	-7.7	+5.3	+6.3	+7.6
20	+25.9	+21.8	+1.6	+3.5	-5.2	+7.7	-7.7	+6.2	+7.1	+7.3
Std Dev	8.6	4.6	0.8	1.5	2.0	1.8	1.6	1.0	2.0	1.4
Ext Spd	28.0	20.1	2.9	6.3	7.5	8.3	5.9	4.8	7.7	5.5
Center of Impact to Pt of Aim	+14.0	+14.0	-0.2	+5.1	-3.1	+4.0	-5.6	+4.7	+4.7	+5.9
Mean Rad	8.6		1.4		2.1		1.6		2.1	

ACCURACY TEST DATA

Range: 1000 inches

Firing Configuration: Full, tripod low, sod, max left, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-3.4	+1.5	-1.6	+2.3	-2.9	+0.9	-2.3	+2.6	-0.9	+2.8
2	-3.6	+9.7	-1.9	+8.0	-3.3	+2.4	-6.2	+4.0	-4.7	+6.2
3	-4.4	+12.2	-2.4	+9.0	-1.3	+3.3	-5.9	+4.5	-3.1	+7.7
4	-4.8	+11.9	-1.5	+10.9	0	+5.7	-4.7	+5.7	-2.7	+8.9
5	-5.6	+12.5	-4.6	+6.0	+1.0	+5.2	-4.5	+5.8	-1.1	+11.1
6	-6.2	+11.4	-9.0	+8.3	+1.5	+6.1	-4.8	+7.7	-4.3	+8.4
7	-8.5	+11.9	-7.8	+8.5	+1.9	+7.3	-6.7	+6.4	-4.1	+9.4
8	-8.7	+11.8	-7.6	+9.5	+1.8	+8.3	-7.9	+5.9	-4.8	+9.4
9	-8.9	+11.8	-6.9	+10.0	+3.3	+6.7	-9.7	+4.7	-4.4	+10.8
10	-9.5	+7.5	-6.6	+12.3	+3.2	+9.5	-9.7	+7.0	-4.9	+11.2
11	-10.6	+10.8	-8.5	+12.0	+3.1	+9.0	-9.3	+7.5	-6.5	+9.8
12	-11.8	+11.8	-9.8	+10.7	+3.3	+8.6	-9.9	+9.0	-6.4	+10.4
13	-12.5	+10.0	-10.5	+11.6	+3.6	+8.7	-10.7	+7.5	-6.4	+11.5
14	-12.7	+12.9	-10.7	+12.4	+4.4	+8.7	-10.7	+7.3	-6.7	+13.2
15	-14.3	+12.3	-10.5	+12.5	+4.8	+10.2	-11.1	+8.4	-9.0	+11.7
16	-14.2	+11.7	-9.9	+12.7	+5.7	+10.5	-11.7	+7.6	-8.9	+12.7
17	-14.7	+10.2	-9.9	+14.8	+4.8	+11.0	-11.9	+7.0	-11.2	+12.8
18	-15.3	+11.7	-10.3	+15.1	+4.6	+11.6	-14.1	+10.8	-11.8	+13.5
19	-15.7	+11.1	-7.6	+17.9	+5.1	+12.1	-14.7	+9.9	-13.8	+13.5
20	-15.7	+12.0	-1.6	+11.0	+5.6	+14.0	-15.5	+10.3	-14.5	+17.7
Std Dev	4.2	2.4	3.4	3.5	2.6	3.3	3.6	2.1	3.8	3.0
Ext Spd	12.3	11.4	9.2	15.6	9.0	13.1	16.4	8.2	13.6	14.9
Center of Impact to Pt of Aim	-10.1	+10.8	-7.0	+10.8	+2.5	+8.0	-9.1	+7.0	-6.5	+10.6
Mean Rad	4.2		4.3		3.4		3.5		4.0	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sod, sandbags, zero defl,sh.A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-2.0	+2.0	-1.0	+2.5	-1.9	-0.1	-0.8	-2.2	-0.6	+0.4
2	-2.1	+2.3	-0.5	+2.5	-2.8	+1.5	-2.4	-0.4	-1.9	+0.9
3	-2.6	+2.6	-0.5	+2.8	-3.6	+1.1	-2.1	+0.3	-2.4	+1.3
4	-2.9	+2.5	-0.3	+3.1	-3.5	+1.5	-2.1	+0.8	-3.3	+1.5
5	-3.5	+2.6	0	+4.0	-4.2	+1.8	-2.3	+0.7	-1.8	+1.6
6	-3.1	+3.0	+0.4	+4.3	-4.0	+2.4	-2.4	+1.0	-1.5	+2.0
7	-3.8	+3.0	+0.8	+4.1	-3.8	+2.7	-2.6	+1.8	-1.6	+2.1
8	-3.8	+3.3	+1.1	+3.8	-4.3	+2.9	-2.8	+1.3	-1.3	+2.6
9	-4.4	+3.4	+1.7	+3.6	-2.9	+3.5	-3.1	+1.3	-2.2	+3.0
10	-4.0	+3.4	+1.0	+3.2	-2.8	+2.7	-3.1	+0.8	-2.2	+2.7
11	-4.2	+3.8	+1.0	+2.9	-3.1	+2.5	-3.1	+0.3	-1.9	+2.6
12	-4.7	+4.7	+1.4	+2.5	-3.0	+2.3	-3.8	+0.5	-2.8	+2.1
13	-3.9	+4.8	+1.1	+2.4	-3.1	+2.1	-3.4	+1.2	-2.1	+1.6
14	-3.7	+4.3	+0.2	+2.7	-3.2	+1.9	-3.7	+1.7	-2.5	+1.7
15	-3.7	+3.8	+0.5	+3.0	-3.2	+1.8	-4.1	+1.5	-2.4	+2.0
16	-3.4	+3.9	+0.2	+2.9	-3.8	+1.9	-4.0	+1.1	-2.3	+2.2
17	-3.2	+3.7	+0.1	+3.4	-3.7	+1.9	-5.2	+1.1	-2.1	+2.3
18	-2.9	+3.8	+0.6	+3.8	-3.6	+2.2	-5.8	+1.4	-1.9	+2.3
19	-3.5	+3.6	+0.7	+3.5	-3.5	+2.1	-6.3	+1.1	-1.8	+1.9
20	-3.9	+3.3	+0.8	+3.8	-3.6	+2.0	-6.2	+0.9	-2.5	+1.9
Std Dev	0.7	0.7	0.7	0.6	0.5	0.7	1.4	0.9	0.6	0.6
Ext Spd	2.7	2.8	2.7	1.9	2.4	3.6	5.5	4.0	2.7	2.6
Center of Impact to Pt of Aim	-3.5	+3.4	+0.5	+3.2	-3.4	+2.0	-3.5	+0.8	-2.1	+1.9
Mean Rad	0.9		0.8		0.7		1.4		0.7	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, sod, sandbags, max right, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.8	+1.0	-5.0	+1.8	+1.8	-0.2	-1.3	+0.7	-2.3	+2.0
2	-0.2	+1.9	-4.3	+1.4	-1.7	+5.1	+0.1	+0.2	-0.5	+1.4
3	-0.1	+1.2	-1.0	+1.9	-1.6	+4.9	+0.4	+3.4	-1.1	+3.1
4	+0.8	+1.7	-0.2	+1.2	-0.3	+4.8	+1.5	+2.4	-1.0	+3.5
5	+1.6	+1.6	+0.1	+2.7	-0.6	+4.4	+1.6	+1.5	-0.9	+4.0
6	+2.3	+1.6	+0.7	+2.6	-0.9	+3.9	+2.0	+0.5	-0.7	+3.6
7	+1.1	+2.4	+2.2	+1.9	-0.8	+3.3	+2.6	+3.3	-0.3	+3.4
8	+0.4	+3.1	+2.8	+2.5	-0.4	+3.4	+3.2	+3.0	-0.4	+3.1
9	+1.5	+3.7	+3.0	+2.5	+0.3	+4.5	+2.6	+2.0	-0.6	+3.2
10	+2.2	+2.9	+2.5	+3.3	+0.3	+3.6	+2.5	+1.7	+0.1	+3.6
11	+2.5	+2.9	+2.9	+3.5	+0.9	+3.9	+2.8	+1.9	+0.2	+3.3
12	+2.9	+3.6	+3.0	+4.1	+0.6	+3.6	+3.0	+1.8	+0.2	+3.1
13	+3.0	+3.8	+3.2	+3.8	+0.6	+3.1	+3.0	+2.1	+0.2	+2.7
14	+2.9	+4.0	+4.0	+4.0	+1.7	+3.5	+3.4	+2.2	+0.5	+2.7
15	+3.3	+4.2	+3.6	+3.5	+2.2	+2.8	+3.5	+2.4	+0.7	+3.8
16	+4.1	+3.5	+4.1	+3.4	+1.9	+1.7	+4.1	+2.7	+0.9	+3.5
17	+3.8	+3.3	+3.8	+3.3	+2.6	+2.2	+4.1	+2.1	+0.2	+4.1
18	+3.9	+2.9	+3.4	+2.9	+3.2	+1.9	+4.2	0	+1.1	+2.2
19	+4.3	+2.9	+4.6	+2.5	+3.6	+2.3	+2.9	+2.0	+1.2	+2.1
20	+4.4	+3.2	+4.7	+2.8	+4.2	+0.7	+3.4	+2.5	+1.4	+1.6
Std Dev	1.6	0.9	2.7	0.8	1.7	1.4	1.4	0.9	0.9	0.8
Ext Spd	5.2	3.2	9.7	2.9	5.9	5.3	5.5	3.2	3.7	2.7
Center of Impact to Pt of Aim	+2.2	+2.8	+1.9	+2.8	+0.9	+3.2	+2.5	+1.9	-0.1	+3.0
Mean Rad	1.6		2.3		1.9		1.3		1.0	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, sod, sandbag, max left, sh. A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.7	+0.1	-4.2	-2.3	-4.0	-3.7	-1.5	-1.3	-2.5	-1.9
2	-2.6	-1.3	-4.4	-1.2	-3.4	-2.8	-1.2	-0.1	-1.5	-1.9
3	-2.4	-1.5	-3.4	-0.9	-2.5	-1.9	-2.3	+0.2	-2.1	-1.2
4	-2.1	-1.8	-2.5	-1.1	-3.5	-1.6	-1.3	+0.4	-1.9	-1.3
5	+0.1	-0.7	-1.7	-0.2	-2.7	-1.1	-1.5	+1.1	-1.8	-1.3
6	+1.6	-1.4	-2.5	-0.2	-3.4	-0.8	-0.2	+0.1	-1.7	-0.2
7	+2.4	-1.3	-3.2	-0.3	-2.1	-0.5	0	+0.2	-1.0	-0.2
8	+2.6	-1.2	-3.2	+0.7	-1.1	-0.4	0	+0.7	-1.2	+0.4
9	+3.1	-0.8	-2.9	+0.8	-2.6	-0.1	+1.0	+1.3	-1.3	+0.6
10	+2.9	0	-2.4	+0.8	-4.0	0	+1.1	+0.9	-2.6	+0.8
11	+2.4	-0.1	-2.1	+0.8	-2.1	0	+1.7	+1.1	-0.6	+0.9
12	+2.0	-0.5	-1.8	+0.9	-2.3	+0.3	+2.6	+0.5	-0.8	+1.3
13	+1.7	-0.4	-1.5	+1.0	-2.4	+0.5	+3.5	+2.0	-0.8	+1.7
14	+1.5	-0.1	-1.3	+1.1	-2.3	+0.8	+3.7	+1.5	-1.0	+1.9
15	+2.8	+0.9	-1.7	+1.5	-2.9	+0.3	+4.7	+2.0	-1.0	+1.7
16	+3.2	+1.0	-1.5	+2.0	-1.4	+2.3	+5.9	+3.3	-1.1	+2.2
17	+2.7	+1.9	-1.9	+1.4	-0.6	+0.9	+6.9	+2.6	-1.6	+2.6
18	+2.4	+2.0	-2.4	+1.2	-0.2	+1.4	+8.5	+1.6	-0.1	+2.4
19	+2.1	+2.4	-1.8	+1.2	-0.1	+1.1	+9.5	+2.5	-0.2	+2.3
20	+2.8	+3.0	-2.2	+0.8	-0.1	+1.2	+10.2	+2.3	-0.2	+2.1
Std Dev	1.9	1.4	0.9	1.1	1.2	1.4	3.8	1.1	0.7	1.5
Ext Spd	5.8	4.8	3.1	4.3	3.9	6.0	12.5	4.6	2.5	4.5
Center of Impact to Pt of Aim	+1.4	0	-2.4	+0.4	-2.2	-0.2	+2.6	+1.2	-1.3	+0.7
Mean Rad	2.0		1.2		1.6		3.4		1.5	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, sand
zero defl., shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.9	+0.7	-1.0	+1.3	-4.5	-1.3	-4.4	-0.1	-0.7	-0.5
2	-0.9	+1.1	-1.3	+1.6	-4.5	-0.6	-3.7	+0.9	-0.7	-2.6
3	-1.8	+1.1	-0.8	+2.9	-3.4	-1.0	-3.8	+1.3	-0.7	-2.9
4	-1.9	+0.8	+1.4	+1.7	-1.3	-1.6	-2.8	+1.4	-0.9	-4.4
5	-1.3	+2.3	+1.2	+2.1	+0.5	-1.2	-1.5	+1.2	0	-3.1
6	-0.7	+2.7	+0.9	+2.7	+0.3	-0.7	0	-1.2	+0.1	-3.2
7	-0.9	+2.8	+1.3	+3.1	-0.9	+0.1	+1.0	-0.5	+0.3	-3.6
8	-0.8	+3.3	+1.7	+3.3	-1.3	+0.6	+1.4	-1.1	+0.8	-2.6
9	-0.7	+3.7	+1.9	+2.6	+0.2	0	+1.8	-1.1	+0.5	-2.8
10	-0.4	+3.8	+1.6	+2.5	+1.2	+0.2	+1.3	+0.2	0	-2.6
11	-0.4	+4.2	+1.8	+3.7	+0.5	+0.2	+1.2	+0.7	+0.2	-2.5
12	-0.1	+3.6	+2.5	+4.5	+0.6	+0.5	+0.9	+0.4	+0.4	-2.4
13	+0.2	+4.5	+2.8	+5.2	+1.0	+0.9	+1.2	+1.9	+0.6	-1.7
14	+0.2	+2.8	+3.1	+3.9	+1.3	+1.0	+2.0	+2.0	+0.8	-1.5
15	+0.2	+2.6	+3.6	+4.3	+1.0	+1.3	+3.0	+3.2	+0.6	-1.0
16	+0.8	+4.2	+4.6	+4.6	+0.6	+1.3	+1.2	+3.0	+1.0	-0.7
17	+1.4	+4.6	+4.8	+3.3	+0.8	+2.0	+0.2	+3.1	+0.3	-2.7
18	+1.6	+4.3	+4.7	+2.3	+1.3	+1.9	-0.2	+2.7	+0.6	-2.7
19	+2.0	+3.6	+3.6	+1.4	+1.3	+1.6	-2.2	+4.3	+0.7	-1.7
20	-0.8	+3.4	+1.8	+3.7	+0.6	+1.3	+0.2	+4.8	+0.5	-2.5
Std Dev	1.0	1.2	1.7	1.1	1.8	1.1	2.2	1.7	0.6	0.9
Ext Spd	3.9	3.9	6.1	3.9	5.8	3.6	7.4	6.0	1.9	3.9
Center of Impact to Pt of Aim	-0.3	+3.0	+2.0	+3.0	-0.2	+0.3	-0.2	+1.3	+0.2	-2.4
Mean Rad	1.4		1.8		1.8		2.6		0.9	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sand, max right, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+0.1	-5.1	-3.3	-1.4	-1.3	-2.2	+0.5	-1.6	+1.0	-1.1
2	+4.1	-4.8	+0.4	+2.0	0	-0.4	+1.0	+0.1	+6.2	+0.3
3	+4.1	-4.0	-0.8	+1.3	+0.1	+0.5	+1.2	+1.0	+4.8	+1.0
4	+4.4	-3.6	-1.4	+1.6	-0.9	+0.7	+0.5	+0.7	+2.5	+1.5
5	+4.2	-3.2	-1.3	+2.3	-0.8	+0.8	+0.4	+1.0	+1.5	+2.6
6	+3.6	-3.0	0	+3.0	+1.1	+0.8	+0.5	+1.3	+2.0	+2.6
7	+4.5	-1.6	-1.5	+3.0	+1.0	+1.0	+0.3	+1.4	+2.1	+3.1
8	+5.2	-1.2	-0.8	+3.8	+1.5	+1.0	-1.6	+1.1	+1.4	+3.5
9	+6.0	-1.1	-1.3	+4.7	+1.9	+0.4	-0.7	+1.4	+1.6	+4.0
10	+5.1	-0.4	-1.5	+4.0	+3.4	+0.1	-1.1	+1.7	+1.6	+4.6
11	+6.3	-2.1	-2.2	+3.5	+3.6	+1.0	-0.4	+2.5	+1.0	+4.6
12	+6.5	-1.8	-3.4	+2.4	+0.8	+2.7	+2.2	+2.0	-0.1	+5.8
13	+6.9	-1.8	-4.0	+2.1	+0.3	+2.2	+3.6	+0.4	+1.1	+3.4
14	+7.1	-1.5	-4.3	+2.1	0	+2.1	+3.5	+1.0	+0.9	+3.5
15	+7.3	-1.0	-4.1	+2.9	+0.3	+1.5	+4.0	+2.0	+0.7	+3.8
16	+7.5	+0.3	-4.4	+3.4	+0.6	+1.5	+4.0	+2.9	+0.8	+3.9
17	+8.4	-0.4	-4.1	+3.5	+0.5	+1.9	+4.0	+3.1	+0.8	+4.2
18	+8.6	-1.0	-4.2	+3.7	+0.8	+1.9	+3.5	+4.0	+0.5	+4.1
19	+7.8	-2.4	-5.3	+4.0	+1.1	+1.8	+3.7	+4.6	+0.6	+4.1
20	+8.5	-2.4	-5.2	+4.2	+1.2	+2.2	+3.7	+4.9	+1.5	+4.0
Std Dev	2.1	1.4	1.7	1.3	1.2	1.0	1.9	1.5	1.4	1.6
Ext Spd	8.5	5.4	5.7	6.1	4.9	4.9	5.6	6.5	6.3	6.9
Center of Impact to Pt of Aim	+5.8	-2.1	-2.6	+2.8	+0.8	+1.1	+1.6	+1.8	+1.6	+3.2
Mean Rad	2.2		2.0		1.3		2.3		1.6	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sand, max left, shooter A.

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-2.1	-0.6	+1.2	-0.5	-0.6	+0.7	-1.4	-2.4	+0.8	-4.6
2	-4.4	+3.7	0	+2.5	-5.9	+3.5	+0.6	-0.6	-0.1	-1.4
3	-5.8	+4.0	-1.8	+3.3	-6.3	+4.2	-0.3	+0.3	-0.5	-2.1
4	-6.2	+4.5	-2.0	+4.6	-7.0	+4.5	-1.1	+0.9	-1.6	-3.8
5	-7.0	+4.6	-2.0	+5.3	-6.6	+5.4	-1.9	+0.6	-3.9	-2.7
6	-7.4	+4.4	-2.3	+5.4	-6.3	+6.1	-1.9	+2.6	-1.9	-2.1
7	-4.7	+5.6	-2.5	+5.6	-5.6	+5.8	-1.3	+2.0	-2.3	-1.5
8	-6.9	+5.9	-2.4	+6.0	-7.6	+6.4	-0.7	+3.7	-2.8	-0.8
9	-4.9	+6.8	-1.9	+5.8	-7.5	+7.0	-1.6	+4.2	-2.6	-0.6
10	-4.5	+7.1	-1.6	+5.6	-7.1	+7.5	+1.2	+3.6	-3.2	+0.3
11	-4.4	+7.5	-1.4	+5.6	-6.3	+7.6	+6.4	+4.0	-2.5	+0.1
12	-5.3	+7.4	-1.6	+7.4	-7.4	+9.4	+7.6	+3.8	-2.2	+0.5
13	-5.5	+7.0	+0.6	+7.7	-6.7	+9.3	+8.8	+3.9	-0.8	+1.0
14	-5.8	+7.2	+3.7	+6.4	-6.0	+9.1	+10.8	+2.6	-0.6	+2.3
15	-6.6	+7.3	+7.3	+6.1	-5.8	+9.6	+11.1	+2.9	-2.8	+2.2
16	-6.2	+7.9	+8.0	+7.3	-6.3	+9.5	+10.9	+3.9	-3.2	+2.1
17	-5.0	+9.5	+7.7	+7.5	-6.5	+9.7	+8.8	+5.5	-3.3	+2.4
18	-4.8	+9.3	+6.7	+7.8	-6.4	+10.4	+8.5	+7.0	-4.1	+3.7
19	-4.5	+9.2	+7.9	+7.4	-6.5	+10.6	+10.3	+7.3	-3.7	+3.6
20	-3.7	+9.8	-2.1	+5.3	-6.4	+10.9	-0.5	+1.5	-2.9	+3.3
Std Dev	1.2	2.4	4.0	2.0	1.4	2.7	5.2	2.4	1.3	2.4
Ext Spd	5.3	10.4	10.5	8.3	7.0	10.2	13.0	9.7	4.9	8.3
Center of Impact to Pt of Aim	-5.3	+6.4	+1.1	+5.6	-6.2	+7.4	+3.7	+2.9	-2.2	+0.1
Mean Rad	2.2		4.1		2.5		5.5		2.3	

ACCURACY TEST DATA

Range: 1000 inches

Firing Configuration: Full, tripod low, sand, sandbags, zero defl, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-3.1	-0.8	-2.4	+5.9	-1.6	+3.3	-4.1	+0.8	-0.4	0
2	-3.3	+0.4	-2.7	+5.6	-1.8	+1.7	-5.2	+2.4	-2.1	+1.7
3	-2.8	+0.5	-2.9	+5.5	-1.5	+1.9	-4.5	+2.8	-0.7	+1.8
4	-2.7	+0.6	-2.7	+5.2	-1.2	+2.7	-4.7	+2.8	-0.8	+3.2
5	-2.2	+1.0	-2.4	+5.3	-1.2	+1.1	-5.0	+3.0	-0.6	+4.5
6	-2.7	+1.5	-2.5	+5.1	-0.8	+1.0	-5.1	+3.2	-1.0	+3.8
7	-3.5	+1.7	-2.6	+5.0	-0.6	+1.2	-5.4	+3.6	-1.0	+4.1
8	-4.0	+0.9	-2.4	+4.7	-0.4	+0.4	-4.7	+3.3	-1.3	+3.9
9	-4.4	+1.7	-2.5	+4.4	0	+0.4	-4.9	+3.7	-1.6	+4.0
10	-4.0	+2.2	-2.3	+4.4	-0.2	+0.1	-5.0	+3.9	-1.4	+3.7
11	-3.8	+2.6	-2.0	+4.7	-0.3	+1.7	-4.3	+4.5	-1.6	+3.4
12	-3.7	+2.7	-1.8	+4.5	-0.4	+1.7	-3.7	+5.2	-1.7	+3.2
13	-3.6	+2.8	-2.9	+4.6	-0.6	+2.4	-3.5	+5.9	-1.6	+3.0
14	-2.0	+2.5	-3.4	+4.4	-0.8	+2.2	-5.3	+5.8	-1.3	+2.8
15	-2.6	+3.3	-3.1	+4.1	-1.4	+2.4	-5.6	+5.0	-1.2	+2.6
16	-3.1	+3.4	-3.7	+3.6	-1.2	+2.0	-4.9	+4.6	-1.3	+2.1
17	-3.6	+3.2	-4.0	+3.3	-0.9	+2.0	-5.6	+4.3	-1.5	+1.9
18	-3.8	+3.5	-3.2	+2.4	-0.8	+1.8	-5.7	+4.0	-1.5	+2.1
19	-4.3	+3.3	-4.0	+4.6	-1.2	+2.4	-5.2	+4.2	-1.6	+2.4
20	-4.1	+5.8	-2.7	+5.1	-0.6	+2.2	-5.1	+4.3	-1.5	+2.6
Std Dev	0.7	1.4	0.6	0.8	0.5	0.8	0.6	1.2	0.4	1.0
Ext Spd	2.4	6.6	2.2	3.5	1.8	3.2	2.2	5.1	1.7	4.5
Center of Impact to Pt of Aim	-3.4	+2.1	-2.8	+4.6	-0.9	+1.7	-4.9	+3.9	-1.3	+2.8
Mean Rad	1.4		0.8		0.8		1.1		0.9	

ACCURACY TEST DATA

Range: 1000 inches Firing Configuration: Full, tripod low, sand, sandbags, max right, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+1.1	-0.5	0	-0.6	-1.7	-1.5	-3.9	-0.9	-1.5	+0.1
2	+4.4	-0.6	-1.0	-0.1	-1.3	-1.3	-3.6	-0.6	+0.1	-1.6
3	+4.5	-1.4	-0.4	-1.2	-1.2	-1.5	-3.5	-1.4	-0.9	-2.2
4	+4.7	-1.4	+0.5	-0.8	-1.3	-2.0	-3.2	-1.2	-1.1	-2.0
5	+5.2	-0.6	+0.5	-0.4	-1.1	-2.7	-2.7	-0.2	-1.1	-1.9
6	+5.2	-0.4	+1.5	0	-0.6	-2.5	-2.5	-0.1	-1.7	-2.1
7	+4.9	+0.1	+1.8	-0.3	-0.2	-2.2	-2.4	-0.7	-1.9	-2.1
8	+5.3	+0.2	+1.2	-0.8	-0.1	-2.4	-2.5	-0.9	-2.3	-2.2
9	+5.4	0	+1.5	-0.8	-0.3	-3.0	-2.4	-2.1	-2.3	-1.9
10	+6.0	+0.9	+1.7	-0.7	-0.2	-2.9	-1.8	-2.0	-2.6	-1.4
11	+6.3	+0.4	+0.7	-1.9	0	-3.3	-1.3	-1.8	-0.6	-0.1
12	+6.5	+0.3	+0.8	-2.0	+0.4	-3.5	-1.5	-1.6	-0.2	-0.8
13	+7.3	+0.1	+1.1	-1.8	+0.5	-3.2	-1.7	-1.5	-1.0	-1.0
14	+7.1	-0.6	+0.3	+0.6	+0.7	-3.7	-1.3	-1.3	-0.8	-1.1
15	+6.1	-1.0	+0.5	+0.8	+0.9	-3.7	-1.5	-0.9	-0.6	-1.1
16	+6.1	-1.2	+0.6	+0.9	+0.3	-2.3	-1.5	-0.9	-0.5	-1.3
17	+5.8	-1.7	+1.1	+0.6	+0.9	-2.6	-0.8	-2.6	-0.2	-1.6
18	+6.4	-1.4	+1.0	+0.4	+1.4	-2.6	0	-0.8	0	-1.2
19	+6.5	-1.5	+0.8	+0.6	+1.6	-2.8	-0.1	-0.5	-0.2	-1.3
20	+7.3	-1.5	+0.9	+0.6	+0.8	-1.0	-1.9	+0.5	-0.1	-1.4
Std Dev	1.1	0.8	0.7	0.9	0.9	1.1	1.0	0.7	0.8	0.6
Ext Spd	6.2	2.6	2.8	2.9	3.3	2.7	3.9	3.1	2.7	2.3
Center of Impact to Pt of Aim	+5.6	-0.6	+0.8	-0.3	0	-2.5	-2.0	-1.1	-1.0	-1.4
Mean Rad	1.3		1.0		1.2		1.1		0.9	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod low, sand, sandbags, max left, shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+2.8	+0.2	+8.7	+3.0	-2.6	+0.4	+0.2	+0.5	-1.5	-1.6
2	-2.9	+1.2	+7.6	+3.1	-9.4	-1.0	-1.9	+1.1	-6.6	+0.4
3	-0.6	+1.9	+6.2	+3.9	-8.9	-0.2	-5.3	+1.9	-6.5	+0.6
4	-0.5	+2.3	+4.3	+1.6	-8.4	+0.3	-2.3	+2.2	-5.9	+1.7
5	-0.3	+3.1	+0.9	+3.9	-9.0	+0.5	-3.4	+2.3	-6.7	+1.8
6	-0.5	+3.1	-0.6	+2.9	-9.3	+0.5	-3.9	+2.5	-7.1	+1.8
7	-0.4	+4.4	-2.1	+3.2	-9.6	+0.3	-4.2	+2.6	-5.0	+2.2
8	-0.7	+5.0	-2.6	+2.7	-9.8	+0.9	-5.1	+3.0	-5.3	+2.4
9	-1.1	+4.2	-2.9	+3.2	-9.1	+1.6	-2.9	+2.6	-6.2	+2.9
10	-2.5	+4.8	-3.2	+3.5	-10.3	+1.7	-3.0	+2.9	-5.8	+2.9
11	-2.4	+4.5	-3.3	+3.4	-10.0	+1.9	-2.0	+2.9	-2.0	+3.7
12	-1.9	+4.2	-4.2	+2.4	-9.7	+2.3	-1.9	+3.1	-3.0	+3.5
13	-1.6	+3.8	-4.0	+1.7	-9.4	+2.7	-1.8	+3.3	-4.1	+4.4
14	-1.9	+3.6	-3.8	+1.0	-9.1	+2.6	-0.9	+3.6	-4.6	+3.3
15	-2.1	+3.4	-4.6	+0.8	-9.0	+2.9	-1.8	+3.7	-5.1	+3.3
16	-2.7	+3.0	-5.2	+1.6	-10.3	+3.2	-2.2	+3.3	-5.0	+3.7
17	-2.8	+3.1	-6.6	+1.6	-9.9	+3.0	-2.0	+3.9	-5.3	+3.9
18	-2.9	+3.3	-5.7	-0.3	-9.3	+3.4	-2.4	+4.7	-5.7	+4.2
19	-3.1	+2.9	-8.3	-0.5	-8.8	+3.8	-3.4	+3.9	-6.0	+3.3
20	-3.6	+3.3	-0.7	-0.5	-9.0	+3.8	-4.3	+4.1	-5.9	+3.1
Std Dev	1.4	1.2	4.6	1.4	1.6	1.4	1.3	1.0	1.5	1.4
Ext Spd	6.4	4.8	17.0	4.4	7.7	4.8	5.5	4.2	5.6	6.0
Center of Impact to Pt of Aim	-1.6	+3.3	-1.5	+2.1	-9.0	+1.7	-2.7	+2.9	-5.2	+2.6
Mean Rad	1.5		4.0		1.7		1.4		1.7	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod high, hard ground, zero defl., sh A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.8	+2.8	-0.8	+1.7	+2.0	+1.5	+0.2	+4.3	+6.1	+7.0
2	-3.9	+5.3	-1.2	+2.8	-0.5	+0.1	-1.0	+7.6	+6.8	+6.3
3	-1.3	+8.5	-2.5	+3.6	-1.1	+0.9	-1.7	+9.1	+8.4	+7.1
4	-0.5	+9.3	-1.1	+4.6	-0.6	+4.2	-4.5	+8.9	-0.1	+6.5
5	-0.8	+10.7	-0.9	+4.9	-1.7	+5.8	-2.5	+11.8	-0.3	+4.6
6	-4.0	+10.4	-1.7	+5.9	-3.2	+7.7	-6.4	+11.2	-0.3	+1.0
7	-5.4	+9.9	-2.0	+5.9	-3.5	+7.8	-6.5	+11.8	-3.3	+5.8
8	-8.9	+9.9	-2.2	+5.1	-5.4	+9.3	-7.2	+12.3	-4.4	+1.3
9	-13.7	+11.5	-3.8	+4.2	-6.0	+8.3	-7.1	+12.4	-5.1	+2.2
10	-9.8	+16.9	-3.6	+5.9	-7.7	+7.9	-8.1	+12.5	-6.6	+1.8
11	-8.2	+20.7	-4.9	+6.2	-7.6	+9.3	-9.2	+12.5	-6.3	+3.0
12	-10.1	+25.5	-5.3	+4.8	-8.7	+9.3	-8.6	+13.3	-7.1	+3.9
13	-11.3	+27.0	-6.1	+7.1	-9.2	+9.5	-7.5	+13.1	-5.9	+5.1
14	+0.2	+7.4	-6.5	+5.0	-5.7	+11.7	-8.5	+13.9	-7.8	+8.1
15	+3.1	+7.4	+0.3	+2.5	-3.4	+14.0	-8.8	+14.1	-9.4	+2.2
16	+3.9	+9.0	+1.9	+4.3	-3.6	+15.5	-9.3	+14.6	-12.9	+3.3
17	+5.0	+9.6	+1.5	+2.8	-5.4	+16.1	-9.6	+14.8	-16.2	+2.5
18	+5.4	+10.2	+2.9	+2.8	-7.5	+15.8	-7.2	+14.9	-17.6	+3.1
19	+3.8	+11.1	+1.6	+2.4	-9.7	+16.8	-6.3	+14.3	-17.9	+2.5
20	+2.0	+11.1	+3.2	-1.3	-11.7	+18.5	-4.4	+16.8	-18.4	+1.7
Std Dev	5.8	6.0	2.8	1.9	3.5	5.3	2.9	3.5	7.8	2.2
Ext Spd	19.1	24.2	9.7	8.4	13.7	18.4	9.8	12.5	26.8	7.1
Center of Impact to Pt of Aim	-2.8	+11.7	-1.6	+4.1	-5.0	+9.5	-6.2	+12.2	-5.9	+3.6
Mean Rad	7.3		3.0		5.5		3.6		6.6	

ACCURACY TEST DATA

Range: 1000 inches   Firing Configuration: Full, tripod high, hard ground, sandbags, zero defl., shooter A

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.2	-0.6	+0.4	-0.6	-1.2	0	0	+1.2	+0.5	+1.6
2	-0.6	-0.7	-1.1	-0.2	0	+1.3	-1.7	+1.9	+0.8	+2.7
3	-0.5	-1.9	+0.2	+2.0	-0.9	+1.2	-1.4	+3.0	0	+2.3
4	-1.2	+1.3	+2.2	+1.2	0	+4.3	-1.8	+3.6	-1.1	+1.2
5	-0.4	+2.2	+1.9	+1.7	-2.5	+1.7	-1.5	+4.7	-1.7	+2.3
6	-2.6	+0.7	+1.7	+1.8	-0.5	+2.5	-2.8	+1.5	-1.2	+3.2
7	-1.9	+1.8	+1.3	+3.1	-1.5	+2.4	-3.5	+2.0	-4.1	+1.8
8	-3.6	+1.2	+0.7	+3.9	-2.4	+2.4	-3.3	+2.8	-2.4	+2.5
9	-2.7	+2.1	-0.1	+2.7	-1.1	+3.8	-3.2	+3.1	-3.8	+3.1
10	-2.8	+2.6	-0.4	+0.4	-0.8	+4.2	-3.8	+2.7	-3.9	+4.1
11	-3.0	+2.5	-0.2	+4.1	+1.7	+1.5	-3.7	+2.9	-3.9	+4.2
12	-1.5	+2.9	-0.4	+4.8	+1.3	+2.8	-3.9	+3.8	-3.8	+4.4
13	-1.4	+3.3	-3.2	+5.2	+0.9	+3.9	-3.3	+4.2	-3.6	+4.5
14	-1.0	+4.4	-3.5	+4.8	+2.2	+5.3	-2.8	+4.6	-2.2	+4.5
15	-0.9	+4.7	-0.5	+2.1	+4.6	+4.9	-3.8	+4.8	-2.4	+4.2
16	-1.0	+5.4	-0.8	+2.7	+8.1	+4.1	-4.8	+5.0	-2.0	+3.6
17	-0.9	+5.8	-1.0	+3.0	+11.0	+6.5	-4.8	+5.5	-1.9	+3.3
18	-0.5	+5.6	-1.1	+3.6	+12.5	+5.7	-6.1	+5.1	-2.3	+3.1
19	-2.0	+5.3	-1.4	+4.0	+15.3	+6.3	-6.0	+5.4	-2.3	+3.2
20	-2.1	+6.2	-1.4	+4.7	+16.6	+6.8	-6.7	+6.0	-2.9	+3.4
Std Dev	1.0	2.3	1.4	1.6	5.9	2.0	1.7	1.4	1.4	1.0
Ext Spd	3.4	8.1	5.7	5.8	19.1	6.8	6.7	4.8	4.9	3.3
Center of Impact to Pt of Aim	-1.5	+2.7	-0.3	+2.8	+3.2	+3.6	-3.3	+3.7	-2.2	+3.2
Mean Rad	2.2		1.8		5.4		1.9		1.4	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Semi, bench rest, shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-6.2	-2.5	-5.6	-1.9	+0.3	-3.2	+0.9	-0.6	-0.5	-0.9
2	-3.9	-4.7	-9.6	+2.0	-0.5	+0.6	-1.4	+0.2	+0.7	+1.3
3	-4.4	-6.1	-5.5	+2.3	-1.0	+0.5	-2.9	0	-0.1	+1.9
4	-2.9	-6.3	-4.4	+4.5	-2.4	+1.1	+1.6	+1.6	-0.6	+1.5
5	-0.6	-7.9	-2.8	+5.3	-3.5	+1.3	+0.2	+1.5	-0.4	+1.8
6	-5.8	-7.8	-2.9	+5.9	-1.9	+2.4	-0.5	+2.4	-5.2	+1.1
7	-6.7	-8.9	-5.4	+5.7	-1.4	+3.4	-3.1	+2.6	-3.5	+2.5
8	-7.5	-10.5	-1.1	+9.7	-2.1	+3.6	-0.5	+3.8	-3.9	+2.7
9	-6.2	-10.7	-7.3	+7.5	-3.8	+3.8	-0.9	+4.1	+0.5	+6.4
10	-5.2	-12.2	-9.0	+8.9	-5.5	+9.3	-0.3	+4.3	-0.2	+3.8
Std Dev	1.9	2.8	2.6	3.3	1.6	2.8	1.4	1.7	1.9	1.8
Ext Spd	6.9	9.7	8.5	11.6	5.8	12.5	4.7	4.9	5.9	7.3
Center of Impact to Pt of Aim	-4.9	-7.6	-5.4	+5.0	-2.2	+2.3	-0.7	+2.0	-1.3	+1.9
Mean Rad	3.2		3.3		2.5		2.0		2.4	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Semi, bipod, shooter A

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	+0.2	-2.6	-4.9	+2.9	-3.6	+0.2	-1.2	+10.7	+3.6	+8.8
2	-3.4	-1.4	-4.4	+4.6	-2.2	+1.5	-3.5	+9.8	+1.0	+9.1
3	-0.3	+4.2	-5.3	+5.5	-3.0	+2.0	-1.5	+9.5	-1.7	+10.9
4	-2.5	+3.7	-3.6	+6.2	-0.1	+3.8	-2.3	+7.6	-2.3	+8.4
5	-3.3	+5.9	-1.5	+5.2	+0.7	+2.7	-0.6	+7.3	-3.0	+7.8
6	-0.2	+7.2	-0.2	+5.9	-2.5	+5.0	-2.9	+5.5	-1.4	+8.0
7	-1.2	+7.0	-1.7	+6.6	-3.9	+4.4	-2.9	+4.6	-0.4	+6.0
8	-4.5	+3.5	-4.3	+7.6	-6.1	+5.0	-0.8	+4.6	-2.8	+5.9
9	-6.5	+4.4	-2.0	+8.2	-1.9	+9.4	-4.1	+3.2	-1.9	+6.4
10	+2.9	+2.2	-1.6	+8.7	-3.3	+10.4	-3.8	+1.9	-1.6	+6.6
Std Dev	2.6	3.1	1.7	1.6	1.8	3.1	1.2	2.8	1.9	1.5
Ext Spd	9.4	9.8	5.1	5.8	6.8	10.2	3.5	8.8	6.6	5.0
Center of Impact to Pt of Aim	-1.9	+3.4	-3.0	+6.1	-2.6	+4.4	-2.4	+6.5	-1.1	+7.8
Mean Rad	3.7		2.2		3.2		2.6		2.0	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bench rest,
shooter A.

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-21.8	+4.5	-10.7	-12.2	-1.0	+4.7	-2.5	-4.1	-6.7	-15.5
2	-21.2	-1.2	-12.7	-10.3	-7.0	+2.3	-5.4	-3.1	-9.4	-12.8
3	-17.4	-1.5	-10.0	-9.5	-9.8	-6.4	-8.8	-0.6	-6.9	-10.6
4	-17.1	-4.5	-7.7	-9.2	-13.6	-2.2	-6.9	-7.3	-13.3	-12.8
5	-10.8	-4.8	-17.0	-8.1	-15.1	-1.4	-3.9	-7.5	-16.5	-9.3
6	-10.6	-2.0	-14.5	-8.6	-9.2	-0.8	-8.0	-14.3	-19.1	-9.6
7	-6.2	-7.3	-12.0	-7.8	-9.9	+0.4	-16.6	-11.5	-19.9	-7.6
8	-5.0	+7.2	-11.4	-7.2	-11.5	0	-23.4	-14.3	-18.7	-6.8
9	-4.9	+6.8	-11.1	-6.9	-10.0	+1.2	-0.5	+13.2	-13.5	-3.5
10	+2.5	-7.0	-11.5	-6.4	-10.8	+0.9	-5.2	+11.8	-14.2	-3.4
11	+3.9	-12.8	-10.5	-7.5	-12.0	+0.7	-6.7	+9.0	-14.0	-2.0
12	-0.5	-9.8	-1.6	-7.8	-11.8	+0.7	-6.4	+9.5	-21.7	-2.0
13	MT	MT	-1.4	-3.3	-12.4	+1.2	-9.4	+13.2	-24.9	-5.7
14	MT	MT	-1.9	+3.4	-11.4	+1.7	-17.7	+7.2	-25.5	-3.1
15	MT	MT	-5.9	+3.5	-5.2	+8.7	-17.0	+3.5	-24.5	-2.1
16	MT	MT	-9.8	+3.7	-7.1	+11.8	-18.9	+3.5	-23.6	+0.4
17	MT	MT	-4.3	+7.0	-9.8	+12.8	MT	MT	-7.9	+1.7
18	MT	MT	-11.0	+7.4	-9.7	+17.2	MT	MT	-2.3	+18.0
19	MT	MT	-11.4	+11.0	-11.9	+16.6	MT	MT	MT	MT
20	MT	MT	-12.0	+11.7	-11.6	+20.5	MT	MT	MT	MT
Std Dev	NA	NA	4.2	7.5	3.0	7.2	NA	NA	NA	NA
Ext Spd	NA	NA	15.4	23.9	14.1	26.9	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	-9.4	-2.9	-10.0	+4.5	NA	NA	NA	NA
Mean Rad	NA		7.7		7.0		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bench rest,
Shooter B

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	+17.6	-6.3	-7.5	-23.3	+4.7	-2.7	+4.0	+7.3	+0.3	-6.0
2	+13.7	-10.7	-11.1	-24.6	+18.5	+5.8	+15.1	+15.9	-2.4	-2.5
3	+4.6	-14.2	-12.7	-24.4	+16.6	-10.0	+18.4	+26.5	-22.0	-2.2
4	+3.5	-15.6	-10.3	-20.5	+11.0	-15.1	+14.6	+23.8	-17.2	-4.9
5	+5.0	-0.5	-10.8	-16.9	+17.0	-17.9	+7.1	+20.5	-19.0	-11.1
6	-2.5	-19.5	-13.0	-19.5	+21.6	-16.2	+2.0	+23.8	-20.2	-15.6
7	-3.7	-17.6	-14.3	-22.0	+21.5	-18.2	-6.8	+22.5	-14.7	-16.3
8	-3.4	-16.2	-15.3	-21.1	+17.3	-28.2	-8.3	+20.0	-19.4	-17.8
9	-1.4	-11.8	-15.9	-16.7	+1.2	-24.1	-9.9	+20.0	-18.4	-19.6
10	-1.0	-11.0	-17.4	-16.6	-6.0	-19.8	-10.0	+20.9	-18.7	-20.0
11	-3.8	-11.9	-17.6	-16.2	-13.5	-21.2	-11.0	+12.3	-12.6	-19.2
12	-5.1	-8.6	-4.1	+1.8	-11.3	-18.1	-13.6	+17.6	-19.2	-22.7
13	-5.4	-11.1	+1.5	+5.7	-8.1	-15.4	-23.2	+17.7	-23.3	-24.9
14	-5.6	-11.3	+21.2	+11.7	-9.1	-14.2	-24.0	+23.8	-12.9	-28.0
15	-7.4	-11.4	MT	MT	-19.0	-14.1	-24.2	+25.5	MT	MT
16	-7.3	-14.2	MT	MT	-1.1	-9.5	-13.7	+28.0	MT	MT
17	-12.5	-21.4	MT	MT	-3.2	-8.4	-13.1	+27.2	MT	MT
18	-12.2	-22.5	MT	MT	MT	MT	MT	MT	MT	MT
19	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
20	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bench rest, shooter C

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	+14.6	-8.4	-0.3	-1.0	+12.2	-4.4	+19.2	+8.9	-7.5	-2.4
2	+11.3	-8.2	-2.7	+1.1	+17.5	-1.6	+15.1	+11.0	-9.8	+1.5
3	+1.9	-4.3	+3.5	+3.8	+20.7	-1.7	+1.4	+7.5	-10.7	+2.3
4	+2.4	+4.6	+8.2	+1.3	+12.3	+0.9	+2.2	+14.0	-10.8	+6.3
5	-4.7	-4.5	+16.4	-2.8	+13.4	+1.8	+5.0	+14.5	-9.6	+7.5
6	-18.3	-0.3	+12.5	-15.3	+12.6	+3.9	-3.0	+16.8	-8.0	+7.4
7	-18.0	+0.3	+4.7	-6.7	+9.3	+1.2	-4.7	+16.6	-4.2	+7.7
8	-17.2	+2.4	+3.5	-5.8	+4.8	+1.2	-4.6	+15.8	-0.5	+10.0
9	-16.7	+2.6	+2.0	-6.0	+15.4	+11.7	-6.4	+11.6	+5.5	+8.3
10	-21.2	+2.3	-3.8	-6.7	+6.7	+9.3	-8.9	+16.8	+7.0	+17.2
11	-22.8	+7.6	-7.3	-7.0	+0.2	+9.1	-14.4	+10.2	-5.5	+12.4
12	-27.0	+6.5	-9.8	-1.9	-2.5	+7.3	-23.5	+22.9	-8.3	+14.2
13	-28.2	+7.7	-13.9	0	-7.5	+6.4	MT	MT	-8.6	+14.9
14	-29.8	+12.1	-9.0	+1.5	-6.3	+12.3	MT	MT	-7.4	+14.8
15	-26.1	0	-15.1	+1.7	-9.5	+10.7	MT	MT	-4.1	+18.2
16	-26.7	-0.9	-17.8	+1.2	-11.8	+13.0	MT	MT	-5.5	+19.5
17	-28.1	-3.5	-19.1	+8.2	-11.5	+13.8	MT	MT	-9.3	+17.0
18	MT	MT	MT	MT	-12.3	+16.3	MT	MT	-10.6	+17.1
19	MT	MT	MT	MT	MT	MT	MT	MT	-15.7	+18.8
20	MT	MT	MT	MT	MT	MT	MT	MT	-16.3	+21.2
Std Dev	NA	NA	NA	NA	NA	NA	NA	NA	5.7	6.5
Ext Spd	NA	NA	NA	NA	NA	NA	NA	NA	23.3	23.6
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA	NA	NA	-7.0	+11.7
Mean Rad	NA		NA		NA		NA		10.6	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod,
shooter A.

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-1.6	+7.5	+0.3	+0.8	-13.8	-5.3	+0.8	+7.5	+1.3	+2.9
2	-4.2	+13.0	+0.9	+1.8	-27.5	-5.8	+2.5	+19.2	+0.1	+3.8
3	-4.9	+13.4	+0.6	+3.8	-31.7	-3.4	+6.2	+19.1	-5.1	+12.2
4	-8.3	+10.7	-4.8	+1.1	-20.1	-15.3	+11.6	+20.9	-5.9	+17.6
5	-8.7	+14.0	-2.9	+3.3	-14.1	-16.5	+12.8	+21.1	-14.2	+12.4
6	-9.1	+13.6	-1.8	+4.4	-11.9	-13.8	+9.5	+23.8	-9.0	+2.0
7	-10.2	+12.7	-3.4	+4.4	-15.7	+0.8	+8.9	+24.2	-9.5	+2.6
8	-3.4	+17.6	-3.2	+5.1	-16.9	+2.0	+1.7	+23.5	-11.0	+2.5
9	-15.1	+12.0	-0.6	+7.0	-15.7	+5.8	+4.1	+25.5	-12.3	+1.4
10	-7.2	+21.1	+1.9	+6.9	-12.7	+6.3	+4.5	+26.0	-14.2	+4.5
11	-8.0	+19.6	+5.7	+10.6	-9.7	+6.9	+1.2	+26.3	-16.6	+4.0
12	-9.0	+18.0	+9.6	+13.6	-10.5	+7.3	+2.2	+28.3	-19.9	+1.0
13	-10.5	+17.4	+9.6	+15.4	-11.6	+8.2	-1.1	+27.0	-19.7	+4.6
14	-12.1	+16.5	+6.9	+21.5	-10.8	+9.0	-2.1	+26.4	-22.6	+5.5
15	-13.8	+16.4	+2.8	+23.9	-7.8	+9.0	-5.3	+23.2	-20.3	+6.7
16	-11.6	+18.5	-6.1	+24.1	-6.2	+8.3	-5.5	+22.8	-16.7	+9.3
17	-11.2	+19.1	-13.9	+19.0	-5.1	+8.5	-10.5	+17.8	-18.7	+11.0
18	-14.7	+18.1	-19.8	+22.7	-9.3	+13.1	-10.0	+19.6	-23.0	+10.4
19	-15.2	+19.1	-20.2	+23.5	-25.9	+12.9	-10.1	+21.7	-19.3	-3.6
20	-12.9	+21.3	-17.9	+25.8	MT	MT	-6.7	+27.8	-16.5	-3.1
Std Dev	3.8	3.6	8.7	8.9	NA	NA	7.0	4.6	6.9	5.2
Ext Spd	13.6	13.8	29.8	25.0	NA	NA	23.3	21.2	24.3	21.2
Center of Impact to Pt of Aim	-9.6	+16.0	-2.8	+11.9	NA	NA	+0.7	+22.6	-13.7	+5.4
Mean Rad	4.7		11.6		NA		7.6		7.8	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter B

	1st		2nd		3rd		4th		5th	
Group	x	y	x	y	x	y	x	y	x	y
1	-5.2	+3.3	-0.5	-1.7	-22.9	+25.0	-6.9	-1.1	-1.1	+13.7
2	-4.9	+3.7	-2.2	0	-19.9	+13.7	-6.5	-1.9	-10.8	+10.3
3	-3.2	+4.1	-8.5	-1.6	-12.5	+14.7	-6.5	-2.4	-10.1	+8.1
4	-2.4	+3.7	-7.9	-3.5	-15.2	+11.9	-5.8	-3.1	-9.3	+5.4
5	-6.0	+5.1	-0.6	+0.5	-13.0	+10.1	-4.5	-4.7	-8.8	+3.3
6	-3.5	+5.8	-6.0	+0.9	-14.5	+7.0	-4.2	-6.5	-9.2	+2.2
7	-1.8	+6.0	-6.9	+0.8	-15.0	+5.2	-3.9	-8.5	-10.4	+1.5
8	-7.9	+6.2	-5.7	+2.1	-12.0	+5.7	-0.9	-10.9	-11.4	+3.8
9	-2.5	+9.7	-5.6	+4.4	-11.9	+7.1	-3.7	-13.9	-11.7	+4.4
10	-2.1	+10.3	-5.7	+5.4	-10.6	+8.2	-9.5	-11.0	-13.3	+3.9
11	-1.5	+10.8	-3.3	+6.7	-9.9	+8.3	-8.7	-5.1	-15.4	+6.8
12]	-3.7	+12.2	-2.5	+6.5	-9.5	+6.1	-8.3	-4.4	-15.4	+4.6
13	-0.2	+14.9	-1.4	+7.1	-8.2	+11.5	-7.7	-2.8	-17.0	+5.2
14	-2.2	+22.8	-1.5	+8.8	-7.6	+10.5	-9.7	-3.8	-17.3	+4.1
15	-10.2	+13.2	-1.5	+10.5	-7.7	+9.2	-10.4	+5.0	-18.4	+9.9
16	+0.3	+16.5	+0.2	+11.3	-6.4	+8.4	-1.9	+9.4	-21.2	+8.4
17	+1.1	+18.0	-4.6	+11.4	-3.8	+12.5	-18.3	+11.5	-21.0	+2.8
18	+5.9	+16.8	-7.1	+12.3	-7.6	+5.4	-19.6	+22.0	MT	MT
19	+8.3	+21.6	-8.8	+17.1	MT	MT	-23.3	+27.2	MT	MT
20	+9.1	+11.0	-16.9	+18.1	MT	MT	-18.5	+26.0	MT	MT
Std Dev	4.9	6.0	3.9	6.1	NA	NA	6.1	11.7	NA	NA
Ext Spd	19.3	19.5	17.1	21.6	NA	NA	22.4	40.3	NA	NA
Center of Impact to Pt of Aim	-1.6	+10.8	-4.9	+5.9	NA	NA	-8.9	+1.1	NA	NA
Mean Rad	6.8		6.2		NA		10.7		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter C.

Group	1st		2nd		3rd		4th		5th	
	x	y	x	y	x	y	x	y	x	y
1	-0.2	-1.1	-1.4	+5.8	-23.9	-0.4	-3.8	-11.7	+4.3	+7.5
2	-0.4	+4.5	-5.3	+4.0	-23.5	-0.1	-4.7	-9.0	-0.7	-2.0
3	+1.8	+4.7	-5.3	+1.6	-25.5	0	-7.2	-8.4	-5.5	-1.0
4	+3.5	+9.1	-12.4	+4.3	-27.3	+1.5	-5.1	-6.5	-8.4	+7.2
5	+2.4	+11.4	-8.9	+1.2	-29.1	+3.5	-6.0	-5.1	-8.9	+6.5
6	-0.4	+9.6	-9.1	0	-29.0	+4.6	-7.2	-4.6	-9.4	+4.0
7	+0.3	+14.8	-9.1	-0.4	-23.9	+4.3	-7.8	-3.8	-12.3	+10.3
8	-1.9	+17.6	-4.9	-1.2	-20.2	+10.4	-8.1	-4.1	-12.6	+8.4
9	-7.1	+13.0	-3.7	-3.4	-23.0	+12.7	-9.9	-4.5	-12.2	+7.2
10	-10.0	+11.4	-4.0	-6.1	-13.8	+11.2	-13.0	-1.9	-12.9	+7.7
11	-10.4	+6.8	-6.1	-7.7	-10.6	+10.7	-9.0	-1.1	-14.8	+3.9
12	-6.7	+23.8	-7.7	-4.7	-6.0	+11.8	-6.4	-0.5	-17.3	+4.1
13	-5.0	+26.5	-10.4	-4.3	-7.5	+5.9	-5.2	-0.2	-15.1	+7.3
14	+4.2	+27.8	-12.9	-3.1	-10.9	+22.5	-3.7	-0.3	-16.0	+7.5
15	-18.5	+28.5	-9.7	-6.4	-16.9	+18.8	-8.0	+0.2	-20.5	+6.5
16	-23.2	+27.7	-9.3	-6.6	-17.5	+18.5	-9.4	+4.7	-21.0	+7.1
17	-17.6	-9.3	-10.8	-7.2	MT	MT	-2.6	+7.1	-21.4	+9.4
18	-11.1	-16.0	-8.9	-8.3	MT	MT	-10.8	+13.4	-22.6	+4.6
19	-1.9	-14.0	-9.8	-8.6	MT	MT	-26.6	+15.5	-24.5	+5.7
20	+0.4	-17.3	-14.4	-11.9	MT	MT	MT	MT	MT	MT
Std Dev	7.6	14.1	5.6	4.8	NA	NA	NA	NA	NA	NA
Ext Spd	27.4	45.8	13.0	17.7	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	-5.1	+9.0	-8.2	-3.2	NA	NA	NA	NA	NA	NA
Mean Rad	14.0		5.2		NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bipod,
shooter A, fouled bore

	1st		2nd		3rd	
Group	x	y	x	y	x	y
1	+2.4	-1.9	-2.4	+5.9	-9.0	+10.6
2	-8.5	-1.3	-0.4	+7.8	-4.1	+11.3
3	-14.4	-2.7	+0.6	+10.9	-2.1	+3.2
4	+2.2	+0.2	+2.4	+15.1	-3.0	-4.1
5	-4.6	+2.8	-0.3	+14.3	+0.4	-1.4
6	-7.2	+3.7	-0.8	+15.3	+1.8	-2.1
7	+1.1	+8.0	-3.0	+14.7	+3.2	-4.8
8	-13.8	+7.3	-15.1	+17.3	+1.0	+5.0
9	-22.6	+6.7	-14.7	+19.6	+1.7	+5.3
10	-23.5	+13.0	-10.3	+21.0	+0.5	+6.3
Std Dev	9.1	4.8	6.2	4.6	3.5	7.0
Ext Spd	25.9	15.7	17.5	15.1	12.2	16.1
Center of Impact to Pt of Aim	-8.9	+3.6	-4.4	+14.2	-1.0	+2.9
Mean Rad	9.2		6.9		7.3	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bipod, shooter B, fouled bore

	1st		2nd		3rd	
Group	x	y	x	y	x	y
1	-9.9	-18.2	-7.4	-19.2	-6.2	+0.5
2	-11.3	-8.6	-11.0	-12.7	-6.7	+2.1
3	-15.0	-7.6	-11.3	-9.0	-8.9	+3.0
4	-0.8	+1.2	-13.2	-12.0	+2.6	+5.8
5	-17.1	+2.3	-15.4	-10.5	-8.8	+8.6
6	-16.3	+5.5	-20.0	-7.8	-13.5	+7.1
7	-11.7	+7.0	-19.1	-3.5	-9.2	+14.4
8	-7.9	+11.1	-9.6	+2.1	-20.9	+14.7
9	-17.1	+19.8	-18.0	+4.2	-11.1	+23.6
10	-15.4	+20.7	-0.4	-6.2	MT	MT
Std Dev	5.0	11.8	5.7	6.6	NA	NA
Ext Spd	16.3	38.9	19.6	23.4	NA	NA
Center of Impact to Pt of Aim	-12.3	+3.3	-12.5	-7.5	NA	NA
Mean Rad	11.4		7.9		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter C, fouled bore

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-6.9	-9.0	0	-18.2	-0.5	+8.6
2	-6.0	-5.7	-0.9	-19.5	-0.6	-18.9
3	-3.8	-13.3	-6.6	-19.6	+0.2	-15.0
4	-2.5	-12.5	-7.1	-23.2	+2.1	-17.3
5	+0.9	-2.8	-7.2	-15.2	+7.8	-16.5
6	+0.5	-13.4	-7.9	-15.7	+9.8	-12.8
7	+4.9	-9.8	-12.5	-13.8	+6.1	-10.8
8	+15.2	-12.2	-12.7	-19.9	+4.2	-9.9
9	+17.4	-14.2	+7.8	-8.0	+2.3	-6.7
10	+17.6	-11.7	+3.2	-24.2	MT	MT
Std Dev	9.1	3.5	6.4	4.5	NA	NA
Ext Spd	24.5	11.4	20.5	16.2	NA	NA
Center of Impact to Pt of Aim	+3.7	-10.5	-4.4	-17.7	NA	NA
Mean Rad	9.0		6.8		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter A, cold & oiled bore

	1st		2nd		3rd	
Group	x	y	x	y	x	y
1	+11.5	-5.2	+4.3	-1.7	+4.0	-2.1
2	+9.2	-2.0	+6.5	+4.3	-1.6	+16.5
3	+9.2	-0.1	+3.0	+6.6	-2.7	+20.8
4	+3.8	+3.0	+1.5	+11.8	-3.1	+21.1
5	+4.3	+4.0	+0.1	+9.3	-1.7	+23.1
6	+3.8	+7.7	-5.0	+9.2	-4.5	+23.3
7	+5.2	+9.2	-6.4	+9.5	-1.0	+24.4
8	-2.6	+12.8	-12.6	+12.6	-2.1	+24.6
9	-3.7	+13.4	MT	MT	-5.5	+29.5
10	-10.1	+22.6	MT	MT	MT	MT
Std Dev	6.4	7.9	NA	NA	NA	NA
Ext Spd	21.6	27.8	NA	NA	NA	NA
Center of Impact to Pt of Aim	+3.1	+6.5	NA	NA	NA	NA
Mean Rad	8.4		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter B, cold & oiled bore

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-14.3	-19.6	-0.7	+2.3	-2.0	-4.5
2	-9.0	-15.1	-3.6	-2.9	-22.5	+5.8
3	-8.4	-14.6	-3.9	-5.3	-10.7	+5.9
4	-5.5	-14.9	-6.9	-5.8	-17.7	+9.4
5	-4.3	-15.1	-9.9	-3.8	-16.0	+9.8
6	-5.9	-17.8	-7.0	-8.7	-20.5	+11.3
7	-3.3	-9.1	-5.3	-11.2	-23.2	+11.8
8	+0.3	-10.1	+5.4	-8.2	-16.7	+18.0
9	+0.2	-14.1	+7.6	-6.3	-18.5	+20.1
10	+4.8	-13.0	+0.4	+4.5	MT	MT
Std Dev	5.2	3.0	5.3	4.6	NA	NA
Ext Spd	19.1	10.5	17.5	15.7	NA	NA
Center of Impact to Pt of Aim	-4.5	-14.3	-2.4	-4.5	NA	NA
Mean Rad	5.1		6.5		NA	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bipod, shooter C, cold & oiled bore

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+2.5	-8.1	-1.2	-4.1	-21.2	+19.4
2	-10.9	-0.4	-13.0	-8.3	-11.7	-2.9
3	-12.0	+1.3	-20.3	-8.4	-10.6	-8.2
4	-11.1	+2.7	-17.9	-3.5	-4.2	-4.8
5	-10.4	+4.6	-20.5	-2.3	+5.2	-0.8
6	-10.1	+7.3	-16.8	+0.7	+2.9	-12.5
7	-13.6	+6.3	-18.4	+15.3	+7.1	-14.5
8	-18.8	+3.1	MT	MT	-2.6	-1.8
9	-19.3	+4.0	MT	MT	MT	MT
10	-25.6	+3.1	MT	MT	MT	MT
Std Dev	6.8	4.1	NA	NA	NA	NA
Ext Spd	28.1	15.4	NA	NA	NA	NA
Center of Impact to Pt of Aim	-12.9	+2.4	NA	NA	NA	NA
Mean Rad	6.2		NA		NA	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bench rest, shooter A

	1st		2nd		3rd	
Group	x	y	x	y	x	y
1	-9.7	-3.8	-11.9	-0.5	+4.8	-1.8
2	-8.8	-6.8	-11.5	-3.5	+1.1	-5.3
3	-9.2	-8.2	-6.5	-4.1	-3.9	-10.8
4	-9.5	-8.4	-5.4	-4.3	-3.5	-11.6
5	-6.9	-8.9	-0.3	-3.3	-4.7	-6.2
6	-1.3	-6.2	+4.5	-4.1	-6.3	-5.0
7	+5.2	-1.8	+15.4	-5.8	-5.5	-4.2
8	+9.3	-2.0	+16.6	-9.8	-6.9	-2.8
9	+6.5	-8.7	+21.0	-11.8	-10.1	-2.3
10	+8.4	-11.2	+21.7	-8.7	-4.5	-0.9
Std Dev	7.7	3.0	12.7	3.3	4.0	3.5
Ext Spd	19.0	9.4	33.6	11.3	14.9	10.7
Center of Impact to Pt of Aim	-1.6	-6.6	+4.4	-5.6	-4.0	-5.1
Mean Rad	7.7		10.8		4.7	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bench rest,
shooter B

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-13.9	-15.2	+4.6	-4.1	-23.6	-9.7
2	-12.4	-15.8	+18.7	-2.4	-21.7	-3.1
3	-8.8	-13.3	+19.0	-4.2	-16.1	-7.5
4	-2.2	-18.0	+22.8	-6.5	-12.4	-3.0
5	+2.9	-20.6	+19.7	-17.4	-7.3	+4.4
6	+3.4	-14.3	+23.7	-14.0	+2.1	+10.2
7	+3.5	-12.6	MT	MT	+2.9	-3.6
8	+4.7	-8.0	MT	MT	+12.7	+12.6
9	+9.7	-5.0	MT	MT	+20.8	+4.9
10	+11.5	-13.6	MT	MT	MT	MT
Std Dev	8.4	4.4	NA	NA	NA	NA
Ext Spd	25.4	15.6	NA	NA	NA	NA
Center of Impact to Pt of Aim	-0.2	-13.6	NA	NA	NA	NA
Mean Rad	8.7		NA		NA	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bench rest, shooter C

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+5.3	+1.0	+20.7	-11.4	-12.5	-0.7
2	+6.7	-7.8	+11.9	-13.6	-8.4	-1.3
3	+3.3	-13.1	+10.1	+0.3	+6.0	-1.3
4	-22.5	-14.5	+19.6	+5.8	+11.9	-3.1
5	MT	MT	+5.7	+3.7	+14.7	-2.9
6	MT	MT	-4.5	+3.2	+17.2	-7.4
7	MT	MT	MT	MT	MT	MT
8	MT	MT	MT	MT	MT	MT
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter A, heated barrel

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-1.6	+9.4	-1.3	-2.8	+0.8	-0.5
2	-12.7	+4.9	-23.1	-3.1	-7.1	+13.4
3	-17.3	+10.2	-19.2	-0.3	-15.3	+12.3
4	-13.1	+10.7	-19.1	+4.2	-15.2	+13.4
5	-14.2	+13.3	-20.5	+5.0	-15.3	+16.9
6	-15.7	+14.5	-16.2	+6.9	-16.9	+18.4
7	-14.8	+16.2	-16.8	+7.1	MT	MT
8	-11.2	+16.8	-17.4	+9.0	MT	MT
9	-15.5	+20.1	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter B, heated barrel

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-10.7	-2.8	-6.5	-1.2	-24.5	-10.0
2	-3.7	+2.4	-26.0	-13.7	-24.7	-5.8
3	-11.8	+8.6	-25.0	-9.8	-23.6	-3.5
4	-21.1	+9.1	-24.5	-5.4	-1.1	+0.5
5	-15.4	+21.5	MT	MT	MT	MT
6	-18.7	+18.7	MT	MT	MT	MT
7	MT	MT	MT	MT	MT	MT
8	MT	MT	MT	MT	MT	MT
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bipod, shooter C, heated barrel

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	0	-0.6	+2.5	-2.5	+11.0	-4.6
2	+1.9	-1.7	+7.3	-4.5	+10.0	-4.5
3	+2.5	-4.8	+9.7	-0.8	+8.1	-8.3
4	+1.8	-9.4	+7.5	-8.5	+3.8	-5.7
5	+6.2	-8.0	+18.2	-1.8	+1.5	-8.3
6	-7.8	+2.0	+19.5	+0.6	-5.0	-10.0
7	-10.2	+5.8	-4.1	-4.0	-9.5	-9.2
8	-13.5	+8.0	-5.0	-1.8	-6.8	-5.0
9	-20.1	+14.1	-6.4	-0.4	-8.0	-3.4
10	MT	MT	-9.5	-0.4	-6.8	-1.7
Std Dev	NA	NA	9.7	2.5	7.6	2.5
Ext Spd	NA	NA	29.0	8.6	20.5	8.3
Center of Impact to Pt of Aim	NA	NA	+4.0	-2.4	-0.2	-6.1
Mean Rad	NA		9.0		7.5	

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Full, bench rest, shooter A, heated barrel

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+2.4	-2.4	+2.6	-5.0	+4.3	+6.4
2	-6.7	-11.8	+1.5	+1.0	+9.0	+1.2
3	-2.4	-16.4	+12.9	-1.4	+15.7	-5.8
4	MT	MT	+19.6	-1.9	+17.3	-3.1
5	MT	MT	MT	MT	+19.0	-3.6
6	MT	MT	MT	MT	+18.2	-6.5
7	MT	MT	MT	MT	+21.6	-6.6
8	MT	MT	MT	MT	+24.0	-2.0
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters

Firing Configuration: Full, bench rest, shooter B, heated barrel

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+7.0	-10.8	0	-11.2	+6.1	-11.8
2	+4.4	-17.3	+4.5	-10.2	-5.2	-24.0
3	+7.9	-18.0	+7.2	-12.1	-14.5	-25.3
4	+20.2	-14.0	+11.5	-26.0	MT	MT
5	+19.6	-26.6	+14.5	-30.0	MT	MT
6	MT	MT	-0.3	-24.1	MT	MT
7	MT	MT	-5.1	-21.2	MT	MT
8	MT	MT	-8.8	-21.0	MT	MT
9	MT	MT	-8.9	-19.0	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA

Range: 100 meters Firing Configuration: Full, bench rest, shooter C, heated barrel

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+4.6	+7.2	+5.9	+5.5	+5.2	0
2	+9.5	+2.1	+12.0	+0.4	+20.2	+1.2
3	+20.2	-3.4	+19.2	-1.8	-13.8	-3.7
4	+8.2	-12.5	+20.4	-6.2	-15.9	-4.2
5	-3.2	+16.2	+25.0	-8.9	-13.6	-7.7
6	-10.7	+15.9	+16.6	+8.6	-2.0	-1.1
7	-11.6	+19.3	+1.7	+16.5	MT	MT
8	-12.1	+21.1	MT	MT	MT	MT
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY AND DISPERSION TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type 53, Ball, Chinese (1339 rounds)

Range: 100 meters

Mode of Fire: Prone with bipod, short bursts

Procedure: Each of three (3) shooters fired short bursts to score as many hits on each of three (3) "E" targets (kneeling silhouette) as possible in 1 minute in accordance with Appendix B of MTP 3-2-045.

Result:

Shooter	Total Rounds Fired	Hits
A	250	62
B	194	51
C	125	61
A	142	62
B	137	62
C	104	44
A	120	114
B	125	108
C	142	131
Total	1339	695

ACCURACY TEST DATA

Range: 100 meters   Firing Configuration: Semi, tripod, sod, 2 sandbags on each leg, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-0.4	-0.8	+1.7	-1.2	-1.2	+0.4
2	-1.9	-2.6	+2.8	-0.8	+2.8	+5.5
3	-0.4	-3.6	+4.0	-2.0	-0.7	-2.1
4	-2.3	+0.1	+2.0	-3.9	-1.8	-2.8
5	+3.5	+6.2	+3.5	-3.7	+0.2	-1.1
6	+2.7	+5.6	+2.0	+0.3	+0.9	-1.4
7	+3.8	+5.4	+2.4	+0.9	+1.1	-1.7
8	+0.7	-1.9	+0.7	+1.4	+1.6	-3.0
9	+1.1	-2.0	+3.2	+3.8	+1.1	-3.4
10	+1.2	-2.9	+6.6	+5.4	+1.0	-3.5
Std Dev	2.0	3.6	1.6	2.9	1.3	2.5
Ext Spd	6.1	9.8	5.9	9.3	4.6	9.0
Center of Impact to Pt of Aim	+0.8	+0.4	+2.9	0	+0.5	-1.3
Mean Rad	3.9		2.8		2.1	

ACCURACY TEST DATA

Range: 300 meters   Firing Configuration: Semi, tripod, sod, 2 sandbags on each leg, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+6.0	-13.2	+7.2	-14.0	+14.6	-11.2
2	-6.2	-3.8	+4.9	-12.8	+8.9	-7.5
3	-9.2	-1.4	-0.4	-9.9	+5.5	-3.1
4	-10.9	-1.0	+1.5	-8.4	+1.7	-0.7
5	-17.4	-3.1	+5.3	-6.6	+9.9	+0.3
6	+4.7	+13.3	+0.8	-6.8	+3.9	+2.7
7	+1.1	+14.5	-7.2	-6.1	+7.4	+5.8
8	+6.1	+17.7	-4.5	-2.3	+4.1	+7.6
9	0	-7.2	+9.0	+7.7	+10.8	+38.7
10	-7.5	-21.1	+10.0	+21.0	+13.2	+27.7
Std Dev	7.7	11.6	5.4	10.1	4.0	14.8
Ext Spd	23.5	38.8	17.2	35.0	12.9	49.9
Center of Impact to Pt of Aim	-3.3	-0.5	+2.7	-3.8	+8.0	+6.0
Mean Rad	12.8		9.6		12.2	

ACCURACY TEST DATA

Range: 400 meters Firing Configuration: Semi, tripod, sod, 2 sandbags on each leg, sh A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+10.2	+24.7	+6.6	-25.3	+9.6	-17.1
2	+6.7	+20.1	-3.1	-21.5	+8.1	-16.4
3	+4.8	+12.3	-5.8	-21.6	+10.4	-11.6
4	+6.2	+7.7	+5.8	-10.2	+8.4	-12.5
5	+9.6	+4.2	+4.4	-8.8	-3.0	-16.8
6	+9.7	+2.2	+0.9	-6.0	-6.8	-18.8
7	+12.5	+0.9	+4.0	-2.7	-12.5	-18.4
8	+15.4	+0.2	+6.8	-0.9	+1.2	-11.6
9	+13.9	+4.7	-10.8	-5.4	-5.3	-3.5
10	+13.9	-21.0	+4.0	+16.4	-7.1	+2.3
Std Dev	3.4	12.5	5.4	11.6	7.9	6.6
Ext Spd	10.6	45.7	17.6	41.7	22.9	21.1
Center of Impact to Pt of Aim	+10.3	+1.5	+1.3	-8.6	+0.3	-12.4
Mean Rad	10.1		10.9		9.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches   Firing Configuration: Semi, machine rest, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-0.8	-7.1	-1.1	-7.7	-1.3	-3.8
2	-1.1	-7.7	-1.5	-7.1	-2.4	-5.5
3	-1.4	-7.8	-1.7	-6.4	-3.1	-5.2
4	-1.5	-6.3	-2.1	-6.8	-2.1	-5.1
5	-1.8	-6.5	-2.3	-6.4	-2.4	-5.0
6	-2.2	-6.5	-2.3	-6.3	-2.2	-4.8
7	-2.2	-6.8	-2.2	-6.1	-2.1	-4.5
8	-2.5	-6.5	-2.3	-5.9	-2.6	-4.5
9	-3.4	-6.8	-2.4	-5.8	-2.9	-4.5
10	-5.5	-6.6	-2.5	-5.7	-2.4	-4.4
Std Dev	1.3	0.5	0.4	0.6	0.5	0.4
Ext Spd	4.7	1.5	1.4	2.0	1.8	1.7
Center of Impact to Pt of Aim	-2.2	-6.9	-2.0	-6.4	-2.4	-4.7
Mean Rad	1.1		0.6		0.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches Firing Configuration: Semi, bench rest, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-0.6	-0.1	0	0	-0.2	0
2	+0.4	-0.4	+0.4	-1.2	+0.3	+1.1
3	+0.7	-0.2	+0.9	+0.2	+1.6	+0.7
4	+0.7	+1.0	+0.9	+0.9	+1.7	-0.1
5	+0.4	+2.4	+0.8	+1.1	+1.2	-0.6
6	+0.9	+0.6	+0.5	+1.8	+1.8	-0.9
7	+1.2	+0.7	+0.7	+2.1	+1.5	-1.1
8	+1.1	+0.4	+1.2	+1.9	+0.7	+0.6
9	+1.8	+0.3	+1.4	+1.5	+0.6	+0.4
10	+2.1	+0.2	+2.3	+1.7	+0.5	+0.3
Std Dev	0.7	0.8	0.6	1.0	0.6	0.7
Ext Spd	2.7	2.8	2.3	3.3	2.0	2.2
Center of Impact to Pt of Aim	+0.9	+0.5	+0.9	+1.0	+1.0	0
Mean Rad	0.8		0.9		0.9	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inch Firing Configuration: Full, bench rest, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+1.2	+0.9	-0.6	+0.6	+0.7	+1.3
2	+0.9	-2.2	+0.5	0	-0.3	+1.5
3	+0.8	-2.9	-0.3	-0.8	-2.1	+1.1
4	+0.2	-4.6	+0.1	-1.2	-2.5	+0.9
5	+1.9	-6.1	+0.4	-1.6	-2.3	+1.7
6	+5.1	-7.9	+1.9	-0.5	-2.5	+2.2
7	+8.4	-5.8	+2.1	+0.3	-1.7	+3.2
8	+8.8	-4.6	+3.0	-0.9	-3.8	+1.4
9	+8.0	-3.0	+3.9	-1.6	-3.7	+1.0
10	+9.2	-2.4	+2.9	-3.0	-4.3	+0.8
Std Dev	3.6	2.3	1.5	1.0	1.5	0.1
Ext Spd	9.0	8.8	4.5	3.6	5.0	2.4
Center of Impact to Pt of Aim	+4.4	-3.9	+1.4	-0.9	-2.2	+1.5
Mean Rad	4.2		1.7		1.4	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches   Firing Configuration: Semi, bipod,
shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+0.4	-0.6	+0.3	-0.1	+0.4	-1.1
2	+0.4	-0.2	+0.2	+0.4	+0.1	-0.5
3	+0.6	+0.5	+0.7	+0.9	-0.4	-0.6
4	+0.3	+0.8	+0.2	+1.5	-0.8	-0.1
5	0	+1.0	+0.6	+1.8	0	+0.9
6	0	+1.5	-1.1	+1.6	+0.2	+1.4
7	-0.4	+0.9	-1.4	+0.8	+1.4	+1.7
8	-0.2	+0.6	-0.5	+0.4	-0.1	+0.2
9	-0.7	+0.3	-0.5	0	0	+0.2
10	-1.2	+0.2	-0.3	0	+0.2	+0.1
Std Dev	0.5	0.6	0.7	0.7	0.6	0.9
Ext Spd	1.8	2.1	2.0	1.9	2.2	2.8
Center of Impact to Pt of Aim	-0.1	+0.5	-0.2	+0.7	+0.1	+0.2
Mean Rad	0.7		0.9		0.8	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches   Firing Configuration: Full, bipod, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+5.8	-1.5	+1.7	-3.2	0	0
2	+5.6	-1.9	+1.6	-2.8	+2.0	+1.1
3	+5.1	-1.8	+1.4	-2.7	+0.6	+1.2
4	+4.5	-1.9	+1.2	-2.4	+0.6	+1.9
5	+3.3	-2.4	+1.1	-2.7	+0.3	+2.1
6	+2.3	-1.8	-0.2	-0.7	+0.6	+2.8
7	+1.8	-1.5	-1.1	-1.0	+0.4	+2.9
8	-1.1	-1.7	-3.3	-2.1	-0.3	+3.2
9	-2.1	-1.8	-3.4	-1.4	-0.9	+1.8
10	-3.5	-1.5	-0.7	+0.6	-1.4	+4.3
Std Dev	3.2	0.3	1.8	1.1	0.9	1.2
Ext Spd	9.3	0.9	5.1	3.8	3.4	4.3
Center of Impact to Pt of Aim	+2.2	-1.8	-0.2	-1.8	+0.2	+2.1
Mean Rad	2.7		2.0		1.2	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Semi, tripod low, hard ground, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+0.4	+0.1	0	+0.2	-1.6	-0.6
2	-0.5	+0.5	-0.5	0	+0.7	+2.3
3	-1.1	+0.1	-1.0	+0.8	+0.6	+0.9
4	+0.4	+0.6	+0.4	+0.5	+1.4	+0.7
5	+1.0	+0.9	+0.8	+0.4	+1.0	-0.4
6	+1.5	+0.9	+1.0	+0.1	+0.4	-0.4
7	+0.4	+1.8	+0.5	+1.1	+1.3	-0.5
8	0	+2.2	+0.9	+1.3	+1.2	-0.2
9	-1.3	+1.4	+1.2	+1.1	+0.9	-0.3
10	-0.9	+1.1	+1.3	+0.9	+0.9	-0.5
Std Dev	0.9	0.6	0.7	0.4	0.8	0.9
Ext Spd	2.8	2.1	2.3	1.3	3.0	2.9
Center of Impact to Pt of Aim	0	+1.0	+0.5	+0.6	+0.7	+0.1
Mean Rad	1.0		0.7		1.0	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches   Firing Configuration: Semi, tripod high, hard ground, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-1.2	+2.6	0	0	+1.4	+1.2
2	0	+1.5	+1.1	+2.8	+0.6	+3.0
3	+0.8	+1.4	+0.2	+1.6	+0.9	+1.8
4	+1.1	+1.3	+0.4	+1.7	-1.0	+2.3
5	+1.3	+0.7	+0.4	+0.9	-1.1	+1.5
6	+1.1	+0.3	+0.7	+1.4	-0.9	+1.5
7	-0.2	-0.3	+1.1	+1.5	-0.9	+1.3
8	-0.4	-0.2	+1.3	+1.2	-0.7	+1.1
9	-0.6	-0.2	+0.9	+1.1	-0.3	+1.2
10	-0.6	+0.1	+1.0	+1.4	0	+1.4
Std Dev	0.8	0.9	0.4	0.7	0.8	0.6
Ext Spd	2.5	2.9	1.3	2.8	2.5	1.9
Center of Impact to Pt of Aim	+0.1	+0.7	+0.7	+1.4	-0.2	+1.6
Mean Rad	1.2		0.6		0.9	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches Firing Configuration: Semi, anti-air, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+1.2	-1.7	+0.3	+0.5	+0.3	-0.3
2	+1.1	-0.6	0	+0.2	-0.5	-0.2
3	+0.9	-0.7	+0.2	+0.2	-0.8	0
4	+0.4	-1.0	0	-2.0	-0.8	+0.6
5	-0.4	-0.8	-0.6	-0.9	-1.6	+1.2
6	-0.3	-0.7	-1.4	-0.1	-0.8	+1.3
7	-0.6	+0.3	0	-0.4	-0.7	+1.7
8	-0.3	-0.4	-0.2	-0.9	-0.4	+1.2
9	0	-0.4	0	-0.8	-0.6	+1.0
10	+0.2	-0.1	+0.3	-0.6	-0.5	+0.9
Std Dev	0.6	0.5	0.5	0.7	0.4	0.6
Ext Spd	1.8	2.0	1.7	2.5	1.9	2.0
Center of Impact to Pt of Aim	+0.2	-0.6	-0.1	-0.5	-0.6	+0.7
Mean Rad	0.6		0.7		0.6	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 1000 inches

Firing Configuration: Full, anti-air, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-0.5	-0.9	-1.0	-0.3	+6.7	-0.2
2	-5.6	-4.5	-0.5	-1.4	+5.2	+1.9
3	-9.1	-1.1	-1.2	-1.9	+4.6	-0.3
4	-10.6	-1.6	-0.6	-2.2	+1.8	-1.9
5	-10.2	-6.0	-0.9	-3.4	+0.6	-1.7
6	-11.8	-7.9	-2.8	-3.8	+0.1	-0.7
7	-13.2	-5.0	-2.8	-4.7	-1.8	-1.9
8	-12.5	-3.4	-2.6	-5.0	-0.3	-3.8
9	-12.1	-2.6	-3.4	-6.5	-3.1	-3.9
10	-12.3	-0.8	-3.1	-8.1	-3.9	-2.9
Std Dev	3.7	2.3	1.1	1.9	3.1	1.7
Ext Spd	12.7	7.1	2.9	7.8	10.6	5.8
Center of Impact to Pt of Aim	-9.8	-3.4	-1.9	-3.7	+1.0	-1.5
Mean Rad	3.8		2.0		3.3	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters Firing Configuration: Semi, machine rest, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	0	-16.2	0	-13.8	-4.4	-11.5
2	-0.2	-16.3	0	-16.0	-4.3	-12.8
3	+0.4	-16.0	+1.5	-16.6	-3.4	-15.2
4	-0.7	-16.5	-0.6	-17.1	-5.0	-15.9
5	-0.4	-17.1	-1.2	-16.4	-4.8	-15.5
6	-2.4	-18.2	-1.0	-13.6	-4.7	-15.4
7	-1.6	-18.9	-3.3	-14.9	-4.6	-15.2
8	+2.2	-17.0	-3.3	-17.3	-3.1	-14.3
9	+1.6	-19.5	-2.2	-18.5	-3.0	-14.2
10	+4.0	-22.3	-1.3	-17.8	-2.6	-14.5
Std Dev	1.8	1.8	1.4	1.6	0.8	1.3
Ext Spd	6.4	6.3	4.8	4.9	2.4	4.4
Center of Impact to Pt of Aim	+0.3	-17.8	-1.1	-16.2	-4.0	-14.4
Mean Rad	2.2		1.9		1.4	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Full, machine rest, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+0.2	-7.3	+3.4	-9.9	-2.5	-6.7
2	+1.9	-9.0	+3.0	-11.1	-3.6	-7.9
3	-0.7	-9.4	+2.0	-11.8	-2.0	-9.2
4	-1.0	-10.9	-0.2	-12.2	-3.0	-9.0
5	-0.7	-11.6	+0.7	-13.0	-3.6	-9.1
6	-2.1	-11.7	-1.0	-12.9	-4.0	-9.4
7	+0.5	-11.1	-0.9	-13.3	-4.9	-10.6
8	+1.3	-11.6	-0.4	-14.2	-3.1	-10.7
9	+1.4	-12.5	+1.2	-15.0	-6.9	-13.2
10	-0.2	-15.1	+3.9	-14.0	-1.8	-11.8
Std Dev	1.2	2.0	1.7	1.5	1.4	1.8
Ext Spd	4.0	7.8	4.9	5.1	5.1	6.5
Center of Impact to Pt of Aim	0	-11.0	+1.2	-12.7	-3.5	-9.8
Mean Rad	2.0		1.8		1.9	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters Firing Configuration: Semi, tripod low, hard ground, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-3.7	-2.2	-1.3	-1.0	+3.4	+2.0
2	-0.7	+1.8	+2.1	+1.9	+3.7	+3.0
3	+3.2	+2.7	-0.1	+2.5	+4.6	+3.1
4	-0.5	+4.1	-1.7	+3.2	+1.6	+6.0
5	-1.8	+6.5	-2.5	+3.5	+5.6	+5.4
6	-3.0	+7.1	+0.3	+6.5	+6.1	+3.5
7	+5.5	+5.6	+0.6	+6.7	+5.0	+6.6
8	+1.2	+7.3	+0.5	+7.0	+3.6	+8.6
9	+2.1	+9.5	+2.2	+7.3	+6.5	+7.7
10	+4.0	+9.2	+3.6	+10.4	+3.2	+11.8
Std Dev	2.7	3.4	1.8	3.2	1.4	2.9
Ext Spd	9.2	11.7	6.1	11.4	4.9	9.8
Center of Impact to Pt of Aim	+0.6	+5.2	+0.4	+4.8	+4.3	+5.8
Mean Rad	4.0		3.3		2.9	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Semi, tripod high, hard ground, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+3.3	-1.0	+2.2	+3.0	+1.2	+0.4
2	+1.0	-0.8	+1.8	+3.3	+0.9	+1.4
3	+0.6	-2.1	+1.8	+4.4	+1.4	+2.6
4	-1.3	-1.9	+0.8	+5.0	+3.2	+5.0
5	-4.9	+0.8	+2.3	+4.8	+2.9	+5.9
6	-2.5	+1.3	+3.0	+6.6	+1.8	+5.7
7	-0.4	+2.5	+2.9	+7.6	-0.4	+2.9
8	-2.0	+5.9	+6.5	+5.7	-1.5	+3.4
9	+2.6	+5.8	-3.7	+3.8	-4.0	+0.1
10	+2.4	+2.6	-3.4	+10.9	-11.5	+6.5
Std Dev	2.4	2.8	2.9	2.4	4.2	2.2
Ext Spd	8.2	8.0	10.2	7.9	14.7	6.6
Center of Impact to Pt of Aim	-0.1	+1.3	+1.4	+5.5	-0.6	+3.4
Mean Rad	3.4		3.1		3.7	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Full, tripod
low, hard ground, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	+4.7	+3.3	+2.0	+5.8	+0.8	-0.9
2	+6.4	+7.1	-8.6	+4.4	+6.8	+2.1
3	+2.0	+4.7	-8.6	+7.0	+8.6	+1.9
4	+0.6	+4.0	+7.3	+11.2	+3.9	+6.4
5	-2.2	+8.1	-12.8	+11.1	-0.8	+6.6
6	-5.7	+6.1	-13.3	+8.9	+1.3	+14.2
7	-11.6	+7.0	-16.8	+6.4	-5.1	+13.8
8	-11.5	+9.5	-20.9	+5.0	-7.0	+15.6
9	-11.0	+9.7	-16.8	+9.2	-8.3	+13.6
10	-9.9	+13.0	-19.3	+14.3	-5.9	+10.6
Std Dev	6.7	2.8	8.7	3.0	5.6	5.7
Ext Spd	18.0	9.7	22.9	9.9	16.9	16.5
Center of Impact to Pt of Aim	-3.8	+7.2	-10.8	+8.3	-0.6	+8.4
Mean Rad	6.7		7.8		7.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters Firing Configuration: Full, tripod high, hard ground, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	+0.5	+4.9	-1.4	+0.2	+3.7	+1.1
2	+5.5	+5.1	-9.8	+17.9	+5.5	+14.6
3	MT	MT	MT	MT	MT	MT
4	MT	MT	MT	MT	MT	MT
5	MT	MT	MT	MT	MT	MT
6	MT	MT	MT	MT	MT	MT
7	MT	MT	MT	MT	MT	MT
8	MT	MT	MT	MT	MT	MT
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters Firing Configuration: Full, anti-air, sandbags, shooter A

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-7.3	-3.7	-23.3	-11.1	-19.7	-16.6
2	-17.4	-17.9	-18.8	+0.3	-14.1	-15.4
3	-0.2	-17.6	-6.5	+4.4	-20.4	-12.0
4	MT	MT	-16.7	+8.1	-17.3	-6.4
5	MT	MT	-20.1	+16.2	-9.0	+1.2
6	MT	MT	-12.5	+18.9	MT	MT
7	MT	MT	MT	MT	MT	MT
8	MT	MT	MT	MT	MT	MT
9	MT	MT	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters

Firing Configuration: Full, anti-air,
sandbags, shooter B

	1st		2nd		3rd	
Group	x	y	x	y	x	y
1	-20.6	-11.5	+8.9	-15.7	-18.0	-12.1
2	-3.9	-13.6	+6.6	-13.6	-16.9	-10.4
3	-2.2	-5.4	+1.8	-5.6	-9.5	-20.4
4	-8.5	-2.1	+0.9	-4.9	-8.7	-19.1
5	-8.7	+5.8	-3.1	-18.3	-6.7	-15.3
6	-22.3	+3.6	-6.9	-1.5	-8.8	-5.3
7	-20.2	+8.2	-6.7	+0.7	-0.5	+4.6
8	-18.6	+21.8	-13.1	-5.7	-10.3	+9.2
9	-29.6	+21.7	-13.9	-5.7	-11.5	+9.8
10	-30.0	+17.7	-16.2	-4.8	-21.7	+3.0
Std Dev	9.5	12.2	8.3	5.9	5.8	10.9
Ext Spd	27.8	35.4	25.1	19.0	21.2	30.2
Center of Impact to Pt of Aim	-16.5	+4.6	-4.2	-7.5	-11.3	-5.6
Mean Rad	14.3		9.8		11.7	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Full, anti-air, sandbags, shooter C

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-14.5	-16.9	-13.5	-6.2	-28.6	-18.3
2	-28.7	-12.6	-10.7	-12.4	-24.0	-23.5
3	-20.7	-7.8	+5.6	-19.8	-8.0	-17.2
4	-24.5	-3.0	+6.0	-18.1	-6.7	+7.8
5	-23.5	-0.9	+1.4	-8.0	+1.9	-20.7
6	-24.2	+3.9	+8.9	-6.9	+10.3	-14.2
7	-9.1	-5.1	-1.7	-0.7	MT	MT
8	-5.1	-7.9	-4.7	+12.2	MT	MT
9	-1.0	-2.9	MT	MT	MT	MT
10	MT	MT	MT	MT	MT	MT
Std Dev	NA	NA	NA	NA	NA	NA
Ext Spd	NA	NA	NA	NA	NA	NA
Center of Impact to Pt of Aim	NA	NA	NA	NA	NA	NA
Mean Rad	NA		NA		NA	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters Firing Configuration: Semi, anti-air, sandbags, shooter A

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-6.3	+4.1	-6.7	+1.1	-5.7	-2.2
2	-6.3	+4.6	-7.8	+1.9	-5.3	+0.2
3	-4.7	+6.3	-5.7	+4.1	-7.4	+0.5
4	-2.1	+6.5	-6.2	+6.7	-8.4	+1.1
5	-6.3	+7.4	-6.4	+7.7	-12.3	+1.6
6	-6.2	+7.8	-7.4	+7.5	-11.4	+3.0
7	-6.5	+9.2	-8.2	+8.4	-8.2	+4.4
8	-5.9	+12.0	-7.9	+9.0	-12.2	+7.1
9	-11.6	+9.7	-9.2	+12.2	-6.2	+8.8
10	-12.3	+5.1	-2.2	-2.6	-7.7	+2.5
Std Dev	2.7	2.4	1.8	4.2	2.5	3.2
Ext Spd	14.4	7.9	3.5	14.8	7.0	11.0
Center of Impact to Pt of Aim	-6.8	+7.3	-6.8	+5.6	-8.5	+2.7
Mean Rad	3.1		3.7		3.5	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Semi, anti-air, sandbags, shooter B

Group	1st x	1st y	2nd x	2nd y	3rd x	3rd y
1	-8.8	+0.3	-7.7	-3.7	-9.0	-4.0
2	-8.1	+1.7	-10.4	-0.7	-8.4	+2.6
3	-10.9	+3.0	-6.7	0	-9.1	+4.8
4	-11.0	+3.4	-9.3	+1.9	-9.7	+6.7
5	-11.0	+4.8	-7.2	+3.6	-8.1	+6.1
6	-12.1	+4.6	-10.8	+2.7	-8.3	+8.2
7	-15.0	+4.3	-12.0	+4.1	-9.2	+7.7
8	-12.1	+6.2	-12.2	+5.9	-8.2	+12.0
9	-12.6	+6.7	-6.5	+2.8	-9.1	+13.9
10	-14.5	+11.4	-6.2	+2.7	-3.4	+6.8
Std Dev	2.1	2.9	2.2	2.6	1.6	4.7
Ext Spd	6.9	11.1	6.0	9.6	6.3	17.9
Center of Impact to Pt of Aim	-11.6	+4.6	-8.9	+1.9	-8.3	+6.8
Mean Rad	2.9		3.1		3.9	

ACCURACY TEST DATA
(Supplemental Firing)

Range: 100 meters   Firing Configuration: Semi, anti-air, shooter C, sandbags

Group	1st		2nd		3rd	
	x	y	x	y	x	y
1	-4.1	-8.1	-1.1	-9.2	-6.1	-12.9
2	-6.2	-5.0	-4.1	-2.4	-0.2	-4.0
3	-6.2	-1.8	-4.6	-1.3	-0.1	-3.9
4	-9.5	-1.3	-5.0	-1.0	-5.5	-0.8
5	-11.0	-0.9	-6.2	+1.0	-5.5	-0.6
6	-7.2	+1.2	-6.2	+1.4	-3.5	-1.4
7	-8.2	+1.3	-8.3	+1.5	-8.9	-0.3
8	-9.0	+2.8	-8.0	+2.1	-8.1	+2.1
9	-7.7	+3.2	-8.3	-0.9	-10.2	+5.2
10	-7.1	+7.0	-10.5	-3.3	-12.6	+3.2
Std Dev	1.8	4.1	2.5	3.2	3.9	4.7
Ext Spd	6.9	15.1	9.4	11.3	12.5	18.1
Center of Impact to Pt of Aim	-7.6	-0.2	-6.2	-1.2	-6.1	-1.3
Mean Rad	3.8		3.4		5.1	

FLASH TEST DATA

Weapon: 7.62x54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition: 7.62x54R (Soviet Ball) (300 rounds)
Camera: Linhof Technika, 4x5
Lens: Schneider-Kreuznach, 1:4.5/150mm
Film: Royal Pan 4141, ASA 400
Camera to Gun Distance: 7 feet 4 inches
Exposure for Gun Image: 1 second at f22
Exposure to Test: f4.5 lens opening, completely darkened environment.

Procedure: The cumulative flash of twenty (20) rounds fired in the automatic mode from one barrel of moderate prior usage in both the hot and ambient configuration was photographically recorded. The hot configuration was achieved by firing a continuous burst of 260 rounds immediately prior to that test. The photographed burst of twenty (20) rounds was fired in short bursts to achieve an approximate rate of fire of 85 rounds per minute in accordance with MTP 3-2-045, paragraph 6.2.17 and Table V, Schedule 3.

SMOKE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type L, Ball, Soviet (50 rounds)

Wind: 0-2 knots, 270° R

Instrumentation: Lumiline screen, Oehler Model 55
Sequence Timer General Radio Model 1541
Linhof Technika Camera, 4 x 5
Schneider-Kreuznach Lens, 1:45/150mm
Royal Pan Film 4141, ASA400

Procedure: In accordance with Paragraph 6.2.18 of MTP 3-2-045.

Result: Comparative photographs prior to and 15 milliseconds after firing a 25-round burst were made from a position 8 feet directly behind the gun position and from a position 100 meters downrange and 20 feet to the right of the line of fire. Shutter setting f32, 1/50 second.

NOISE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type L, Ball, Soviet (20 rounds)

Temperature: 70°F

Relative Humidity: 66%

Instrumentation: B & K Microphone and Tektronix Type RM565 Oscilloscope.

Position		Peak Pressure (db)	Positive Pressure Duration (millisecond)	Positive Pressure Duration (millisec)
42" behind and level with line of bore	1	145	.25	1.00
	2	147	.50	1.00
	3	144	.15	1.00
	4	145	.20	1.00
	5	145	1.00	1.00
	6	147	.50	1.00
	7	147	.50	1.00
	8	145	.35	1.00
	9	149	.20	1.00
	10	147	.40	1.00
2 meters to right of muzzle	1	158	.38	.38
	2	156	.35	.35
	3	156	.32	.32
	4	156	.30	.30
	5	157	.30	.30
	6	157	.30	.30
	7	157	.35	.35
	8	157	.30	.30
	9	157	.32	.32
	10	157	.32	.32

BELT PULL TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Ball, Type L, Soviet (100 rounds)

Procedure: The PKM Machine Gun was prepared and tested in accordance with paragraph 6.2.20 of MTP 3-2-045.

Results:

Belt	Stopping Force (Pounds of Pull)
1	52
1	45
1	44
2	47
2	47
2	45
3	48
3	50
3	44
	422
AVERAGE	46.9

ATTITUDE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type L, Ball, Soviet (4800 rounds)

Procedure: The test sample was fixtured by fixing the bipod mount to each of four (4) surfaces, which provided for the principal weapon orientations (top up, right side up, left side up, bottom up). The weapon was otherwise free to recoil to the extent of that controllable by the shooter who fired the weapon from the shoulder. Firing sequences were in accordance with Table VI, 0° elevation, of MTP 3-2-045, i.e., sporadic five-round bursts and continuous bursts of 50 rounds.

Result: Four (4) malfunctions were encountered during this test as follow:

Round	Malfunction	Mode	Attributable
72	Failure to Eject	Right side up, continuous fire	Gun
521	Failure to Feed	Right side up, sporadic fire	Ammo (deformed case)
3803	Failure to Feed	Bottom up, sporadic	Ammo (deformed case)
4775	Failure to Fire	Bottom up, continuous	Ammo (bad primer)

COOK-OFF TEST DATA

Weapon:	7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition:	7.62 x 54R, Type L, Ball, Soviet (2210 rounds)
Instrumentation:	Leeds & Northrop Speedomax Chart Recorder Thermocouple, Chromel-Alumel Type K

	Conditioning Rounds		Maximum Temperature (°F)*				
Test	No.	Time min/sec	A	B	C	D	Cook-Off (min/sec)
1	400	1/11**	1125	1108	1045	985	0/24
2	300	0/51	935	980	1035	815	0/33
3	250	0/22	875	940	1015	765	none
4	260	0/36	915	1010	1065	815	0/17
5	250	0/21	890	985	1035	785	none
6	250	0/21	875	980	1045	805	none
7	250	0/21	895	1005	1070	815	none
8	250	0/20	875	960	1040	790	none

*A - 17 1/8 inches behind muzzle (4 inches forward of chamber)
B - 10 inches behind muzzle of gun (2 inches behind gas port)
C - 6 inches behind muzzle of gun (2 inches forward of gas port)
D - Base of muzzle attachment (flash suppressor)

**One (1) stoppage after approximately 200 rounds due to twisted belt. Personnel error.

ENDURANCE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition: 7.62 x 54R, Ball, Type L, Soviet (13256 rounds)

Sequence	Rounds Fired
A. Recorded Cyclic Rate and Velocity	136
B. Initial	
Continuous from test stand	200
Continuous from bipod	200
Continuous from tripod	200
C. Test Stand	
1 round every 3 seconds	200
5-round burst every 3 seconds	200
20-round burst at approximately 85 rpm	200
50-round burst every 30 seconds	200
Continuous burst	200
D. Test Stand (C, above)	1000
E. Test Stand (C, above)	1000
F. Test Stand (C, above)	1000
G. Test Stand (C, above)	1000
H. Bipod (C, above)	1000
I. Bipod (C, above)	1000
J. Bipod (C, above)	1000
K. Bipod (C, above)	1000
L. Bipod (C, above)	1000
M. Recorded Cyclic Rate and Velocity	60

ENDURANCE TEST DATA (Continued)

Sequence	Rounds Fired
N. Tripod (C, above)	1000
O. Tripod (C, above)	1000
P. Tripod, 1 round every 3 seconds	200
Q. Tripod, 5-round burst every 3 seconds	200
R. Recorded Cyclic Rate and Velocity	60

Total This Test:	13256
Total Prior Tests:	13859
Total Fired After Completion of This Test:	27115

VELOCITY AND CYCLIC RATE

Sequence	Average Velocity (fps)	Average Cyclic Rate (rpm)*
A	2799	700
M	2801	690
R	2833	693

*Gas cylinder setting in position 1 throughout this test.

BARREL EXAMINATION

	Bore (in.)	Grove (in.)
Initiation of Test Program (ref. only)	.3000	.3125
Completion of Endurance Test (27115 rds)	.3010	.3127

Visual examination of the bore indicates light to moderate. Pitting just forward of throat after 27115 rounds.

ENDURANCE TEST DATA (Continued)

MALFUNCTIONS

Round	Malfunction	Cause
199	Failed to extract	Gun
1620	Failed to feed	Bullet tip failed to enter chamber, (gun)
4645	Failed to feed	Bullet tip failed to enter chamber, (gun)
5003	Failed to fire	Ammunition
5710	Failed to feed	Belt drag on mount (personnel)
5715	Failed to feed	Belt drag on mount (personnel)
5717	Failed to feed	Belt drag on mount (personnel)

MISCELLANEOUS

After completion of the Endurance/Reliability Test, the PKM Machine Gun was disassembled and thoroughly cleaned. Upon reassembly and test firing, frequent cartridge case separation was experienced. Initially this was attributed to wear of the Bolt Locking Lugs (.006"); however, subsequent exploratory tests indicate that this failure was more likely attributable to deficiencies in the cartridge cases.

ENDURANCE TEST DATA
(Supplemental Firings)

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition: 7.62 x 54R, Type L, Ball, Soviet (6466 rounds)

Procedure: After all other firing sequences of this test program were complete, the PKM Machine Gun was prepared and fired in accordance with the procedures of paragraph 6.2.8 (Endurance and Reliability) of MTP 3-2-045.

Result: The 6466 rounds fired in this test produced five (5) malfunctions of which four (4) were attributable to the gun. Of these four (4) malfunctions, three (3) resulted in a stoppage as did the one (1) malfunction not attributable to the gun.

Round	Malfunction	Cause
301	Failure to Feed	Gun
541	Failure to Feed	Gun
2147	Failure to Feed	Gun
2320	Failure to Extract (Split Case)	Ammo
4780	Broken Belt Exit Port Cover and Spring	Gun

After completion of this test, the following data was recorded:

Velocity (fps): First group of 10 rounds:
Maximum - 2450
Minimum - 2303
Average - 2367
Variation - 147

Second group of 10 rounds:
Maximum - 2446
Minimum - 2265
Average - 2393
Variation - 181

ENDURANCE TEST DATA
(Supplemental Firings Continued)

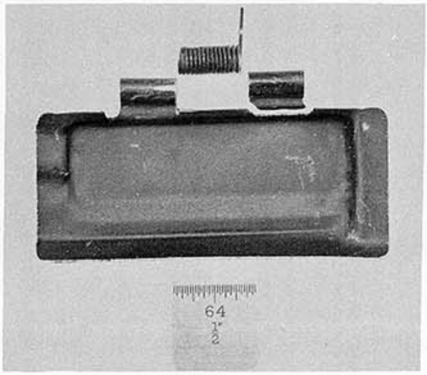
Yaw: Extreme

Rate of Fire: First group of 19: 654 RPM
Second group of 17: 638 RPM

Groove Diameter: .3128 inch

Bore Diameter: .3012 inch. Throat badly eroded. Lands not discernible for approximately two (2) inches forward of chamber.

Firing Pin Protrusion: .061 inch



Broken Belt Exit Port Cover and Spring

UNLUBRICATED TEST DATA

Weapon: 7.62x54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62x54R, Ball, Type L, Soviet (1600 rounds)

Procedure: The test weapon was disassembled, cleaned and reassembled without lubrication. Firing in accordance with paragraph 6.2.10 was initiated.

Result: After approximately 200 rounds, repeated case separation was encountered which upon investigation was apparently due to wear of the Bolt Locking Lugs induced by the preceeding test (Endurance). However, when this Bolt was replaced, the case separation continued. It was determined that until this point, the ammunition used had been from the same lot. Subsequent firings from another lot using either the worn Bolt or its new replacement failed to produce any further case separations.

Because of Bolt Lug wear, the minimum headspace to which the worn Bolt could be adjusted was to that point where the Bolt would close on a cartridge and a .006 inch shim,but would not close on the cartridge and a .007 inch shim while the new Bolt was adjusted to close on the cartridge with no shim, but would not close on the cartridge and a .001 inch shim.

UNLUBRICATED TEST DATA (Continued)

		Worn Bolt		New Bolt	
Round No.	Case	RPM	Malfunctions	RPM	Malfunctions
0-20	Steel	633	0	N/A	N/A
21-40	Steel	633	0	N/A	N/A
41-60	Steel	633	0	N/A	N/A
61-200	Steel	N/A	1	N/A	N/A
201-216	Steel	722	0	N/A	N/A
217-220	Steel	N/A	4	N/A	N/A
221-242	Steel	652	0	N/A	N/A
243-400	Steel	N/A	0	N/A	N/A
401-420	Steel	N/A	N/A	626	3
421-580	Brass	N/A	N/A	N/A	0
581-600	Brass	N/A	N/A	706	0
601-620	Brass	N/A	N/A	679	0
621-779	Brass	N/A	N/A	N/A	0
780-800	Brass	N/A	N/A	706	0
801-820	Brass	N/A	N/A	690	0
821-980	Brass	N/A	N/A	N/A	0
981-1000	Brass	N/A	N/A	714	0
1001-1020	Brass	712	0	N/A	N/A
1021-1040	Brass	714	0	N/A	N/A
1041-1060	Brass	706	0	N/A	N/A
1061-1220	Brass	N/A	0	N/A	N/A
1221-1240	Brass	714	0	N/A	N/A
1241-1260	Brass	714	0	N/A	N/A
1241-1580	Brass	N/A	0	N/A	N/A
1581-1600	Brass	714	0	N/A	N/A
TOTAL			5		3
AVERAGE RPM (STEEL CASE)		654		626	
AVERAGE RPM (BRASS CASE)		712		699	

UNLUBRICATED TEST DATA (Continued)

Malfunctions:	Round	Malfunction	Attributable
	200	Case Separation	Ammo
	217	Case Separation	Ammo
	218	Case Separation	Ammo
	219	Case Separation	Ammo
	220	Case Separation	Ammo
	406	Case Separation	Ammo
	407	Case Separation	Ammo
	409	Failure to Eject	Gun

DYNAMIC DUST TEST DATA

Weapon: 7.62x54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62x54R, Ball, Type L, Soviet (238 rounds)

Procedure: The PKM Machine Gun was prepared and tested in accordance with MTP 3-2-045, paragraph 6.2.12. The number of rounds required to cause cook-off had been established by prior testing at 250 to 260 rounds. The total rounds fired in this test was therefore limited to 238 in seven (7) equal (34 rounds) automatic firing cycles in accordance with paragraph 6.2.12.

Results:

Firing Sequence	Rounds	Cyclic Rate
1	34	703
2	34	680
3	34	691
4	34	680
5	34	647
6	34	647
7	34	637

Total elapsed time sequence 1 thru 7: 2 minutes, 17 seconds.

STATIC DUST TEST DATA

Weapon: 7.62x54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62x54R, Ball, Type L, Soviet (50 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with paragraph 6.2.13 of MTP 3-2-045.

Result: After conditioning in accordance with paragraph 6.2.13, the PKM fired one (1) continuous burst of 50 rounds without malfunction.

MUD TEST (NO. 1) DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Ball, Type L, Soviet (50 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with the procedures of paragraph 6.2.15 of MTP 3-2-045 without malfunction.

MUD TEST (NO. 2) DATA

Weapon: 7.62 x 54R PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Ball, Type L, Soviet (50 rounds)

Procedure: The PKM Machine Gun was prepared in accordance with the procedures of paragraph 6.2.16 of MTP 3-2-045.

Results: Multiple attempts to fire the PKM after preparation were unsuccessful. The Belt was removed and a single cartridge positioned in the Cartridge Gripper and the weapon fired successfully. A clean Belt of ammunition was substituted for the mud conditioned Belt without success. The weapon was immersed in clean water and agitated for 60 seconds but still failed to fire. It was then field stripped thoroughly cleaned and oiled after which the weapon fired 50 rounds without malfunction.

All failures to fire were accompanied by a light impression of the primer. This would seem to indicate that sluggish Bolt action (as a result of the build up of mud in the feed mechanism) reduced the striking energy of Bolt to a level below that required to initiate the primer.

HIGH TEMPERATURE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Ball, Type L, Soviet (6250 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with paragraph 6.2.9.1 of MTP 3-2-045.

Results:

Round Number	Cyclic Rate	Round Number	Cyclic Rate	Round Number	Cyclic Rate
180-200	750	2200-2220	726	4380-4400	698
200-220	714	2380-2400	714	4400-4420	690
380-400	723	2400-2420	720	4580-4600	690
400-420	714	2580-2600	720	4600-4620	695
580-600	723	2600-2620	696	4780-4800	692
600-620	750	2780-2800	718	4800-4820	690
780-800	723	2800-2820	720	4980-5000	690
800-820	710	2980-3000	720	5000-5020	684
980-1000	718	3000-3020	682	5180-5200	682
1000-1020	703	3180-3200	732	5200-5220	690
1180-1200	706	3200-3220	712	5380-5400	720
1200-1220	723	3380-3400	690	5400-5420	682
1380-1400	723	3400-3420	718	5580-5600	698
1400-1420	716	3580-3600	732	5600-5620	690
1580-1600	722	3600-3620	750	5780-5800	690
1600-1620	720	3780-3800	720	5800-5820	678
1780-1800	750	3800-3820	750	5980-6000	698
1800-1820	737	3980-4000	714	6000-6020	720
1980-2000	750	4000-4020	690	6180-6200	690
2000-2020	750	4180-4200	690	6200-6220	720
2180-2200	720	4200-4220	675		
				AVERAGE	711.6

HIGH TEMPERATURE TEST DATA (CONTINUED)

Barrel Examination: At the conclusion of the High Temperature Test, the PKM was fired to determine muzzle velocity and bullet yaw as an indication of barrel wear.

Velocity -

Average of 20-round group -	2744.8 fps
Maximum of 20-round group -	2786.7 fps
Minimum of 20-round group -	2712.2 fps

Yaw - None

Bore Diameter - .3010 inch

Groove Diameter - .3127 inch

NOTE: Visual examination does not indicate appreciable increase in pitting in throat area originally detected after Endurance Test-Light to Moderate.

Malfunctions: During the firing of 6250 rounds, five (5) malfunctions were encountered--four (4) attributable to ammunition and one (1) to personnel error.

Round Number	Malfunction	Cause
308	Failure to Fire	Faulty primer
3140	Failure to Feed	Belt Drag (Personnel Error)
3325	Failure to Extract	Bulged cartridge case
3750	Failure to Extract	Split cartridge case
4120	Failure to Extract	Split cartridge case

WATER SPRAY TEST DATA

Weapon:	7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378
Ammunition:	7.62 x 54R, Ball, Type L, Soviet (600 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with paragraph 6.2.11 of MTP 3-2-045 without malfunction.

EXPOSURE DATA

	Exposure Time (Min.)	Cumulative Exposure Time (Min.)	Rain (In.)	Cumulative Rain (In.)
Horizontal Orientation				
Bolt Closed	5	5	1.8	1.8
Bolt Open	5	10	2.2	4.0
Firing	3	13	1.8	5.8
Bolt Closed	5	18	2.0	7.8
Bolt Open	5	23	1.7	9.5
Firing	2.5	25.5	1.9	11.4
Muzzle Up				
Bolt Closed	5	30.5	2.3	13.7
Bolt Open	5	35.5	1.6	15.3
Firing	3	38.5	1.7	17.0
Bolt Closed	5	43.5	2.0	19.0
Bolt Open	5	48.5	2.1	21.1
Firing	2.5	51.0	1.5	22.6

WATER SPRAY TEST DATA (CONTINUED)

EXPOSURE DATA (CONTINUED)

	Exposure Time (Min.)	Cumulative Exposure Time (Min.)	Rain (In.)	Cumulative Rain (In.)
Muzzle Down				
Bolt Closed	5	56	2.0	24.6
Bolt Open	5	61	2.1	26.7
Firing	2.5	63.5	1.7	28.4
Bolt Closed	5	68.5	1.5	29.9
Bolt Open	5	73.5	2.0	31.9
Firing	2	75.5	1.8	33.7
TOTAL	75.5		33.7	

ICING TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Type L, Soviet (50 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with paragraph 6.2.9.3 of MTP 3-2-045 without malfunction. No removal of the ice was necessary to facilitate firing; however, the Feed Cover was opened and closed once and the belted ammunition shaken vigorously causing much of the ice to loosen and fall away.

LOW TEMPERATURE TEST DATA

Weapon: 7.62 x 54R, PKM Machine Gun (Soviet), Serial No. IP378

Ammunition: 7.62 x 54R, Ball, Type L, Soviet (12860 rounds)

Procedure: The PKM Machine Gun was prepared and fired in accordance with paragraph 6.2.9.2 of MTP 3-2-045.

Results: During the firing of 12800 rounds, 65 malfunctions were encountered of which seven (7) were attributable to the gun and the remaining (58) attributable to the ammunition.

Malfunctions:

Round No.	Malfunction	Attributable
5, 1720, 1740, 2180	Failure to Feed. Cartridge Gripper failed to ride over rim and extract from belt.	Gun (4)
1722 6573 11569 2387 6601 11622 2396 6633 11671 2572 6652 11699 2577 6695 11742 2643 6712 11759 2647 6741 11841 3140 6752 11888 4160 6777 11917 4334 6790 11925 4805 7650 12005 4863 7981 12021 4894 9872 12078 4949 10258 12143 4988 10527 12154 6410 10835 12169 6483 10967 12174 6522 11411 12185 6561 11525	Cartridge case split and/or separated.	Ammunition (56)

LOW TEMPERATURE TEST DATA (CONTINUED)

Round No.	Malfunction	Attributable
3082, 9565	Failure to Eject	Gun (1) Ammunition (1)
8672	Failure to Fire	Ammunition (1)
7246	Broken Extractor Spring	Gun (1)
9592	Broken Flash Suppressor	Gun (1)

NOTE: After 12,200 rounds had been fired, a new lot of ammunition was selected and all case splitting and separation ceased.

Upon completion of the Low Temperature Test, the following data was recorded:

Velocity: 2579.9 fps (Average of twenty rounds. The extreme variation of which was 131 fps)

Rate of Fire: 750 RPM

Bore Diameter: .3012

Groove Diameter: .3127

Firing Pin Protrusion: .060

Yaw: None

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19. KEY WORDS (*Continue on reverse side if necessary and identify by block number*)

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20. ABSTRACT (*Continue on reverse side if necessary and identify by block number*)

This report covers detailed technical analysis and operational characteristics of the Soviet 7.62-mm Model PKM Machine Gun. Coverage includes accuracy, safety, climatic, performance, firing and human factor tests, comparative data, and photography.

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